AMERICAN

Cinematographer

JANUARY 1958

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

In This Issue . . .

• The Science of Picture Photography
• How "All-Star Golf" Is Shot for Television
• Photographing "Wild Is the Wind"

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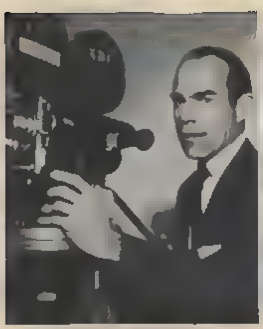

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Mr. Gene Juster (right) of NBC Newsfilm and Mr. William Sweet, Du Pont Technical Representative, discuss the ability of Du Pont "Superior" 4 to withstand the high processing temperatures met when using NBC's 'Jiffy' processor.

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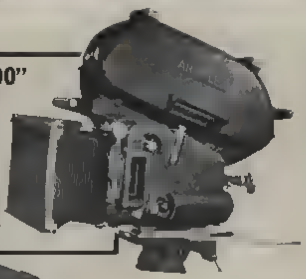

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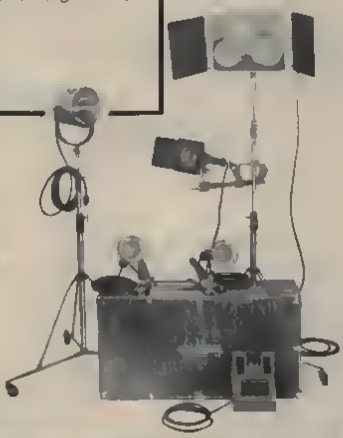

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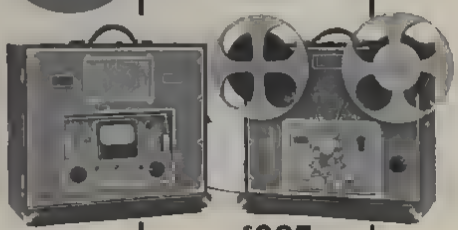

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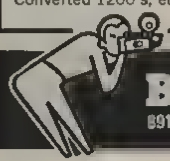

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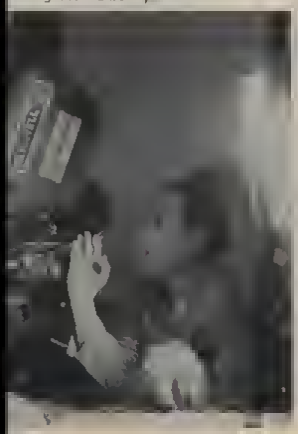

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PUBLICATION OF THE AMERICAN SOCIETY OF CINEMATOGRAPHERS

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ON THE COVER

OBSERVING Japanese custom, camera crew under direction of Charles G Clarke, ASC, work shoeless while shooting scenes inside native shrine for 20th Century Fox's "Townsend Harris Story" in Japan Director John Huston watches preparation from doorway while his script girl notes directions for next scene Meanwhile, cinematographer Clarke is up front (out of picture) making last-minute check of the lighting. (See story beginning on page 34, this issue).

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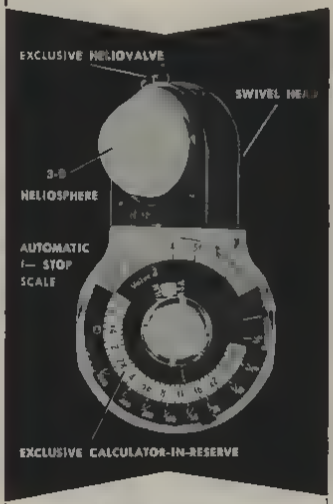

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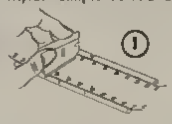

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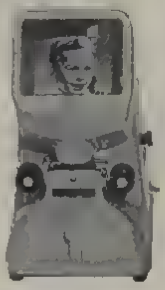

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TECHNICAL QUESTIONS & ANSWERS

Conducted by Walter Strenge, A.S.C.

QUESTIONS relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—*Ed.*

Q What is the best method for achieving a night effect, using Kodachrome Commercial film and shooting in daylight?—*A. J. N., Maryknoll, N. Y.*

Answer: To obtain night effects with Kodachrome Commercial film, Type 5268, omit the Wratten 83 filter and decrease exposure 1½ stops below what you would normally use when shooting this film in daylight with the Wratten filter.

Since shooting this film without the Wratten filter tends to cause a measure of increased exposure, the 1½ stop reduction recommended above actually becomes 1 full stop. Because an original obtained in this manner would not be considered sufficiently dark to give the desired night effect to the scene, it is advisable that further correction or darkening of the scene be done by the laboratory by "printing down."

It should be borne in mind that since the preparation of prints from Kodachrome Commercial color film is a reversal-to-reversal printing operation, it is necessary for the laboratory to use a lower printing light to produce a darker print, rather than the reverse which is common negative/positive practice.—*Norwood L. Simmons, A.S.C. Associate Eastman Kodak Co.*

Q I have encountered problem of stroboscopic effects in both animation and live action photography. When backgrounds used in animation work are pulled through in front of the camera—east or west—or when any foreground subject is moved in like manner, the stroboscopic effect results. Recently, when filming live action of merchandise on a revolving turntable, the resulting strobe effect was so great the shot had to be discarded. In this instance, the turntable rotated very slowly; the camera was located about 3 feet from front rim of turntable and elevated about 1½ feet—looking down on turntable with its merchandise display.—*J. E. W., Jackson, Tenn.*

Answer: The strobe effect referred to is an inherent fault of the motion picture system. Motion pictures are made possible by the phenomenon of persistence of vision; consequently, a series of progressive still pictures when viewed in rapid succession and in proper order will produce the illusion of movement.

When a series of motion picture film frames are examined, however, it will be noted that generally one-half of the action continuity is missing, due to the camera shutter being alternately opened and closed. It is these gaps in the action, especially fast action, that is the basic cause of stroboscopic effect.

The use of a very wide shutter opening—say 250° or more—would decrease the strobe effect by producing longer blur and shorter gap in the image of the action. A very narrow shutter opening, on the other hand, will increase strobe effect by producing a short blur and a long gap in the action.

Strobe effect is often most pronounced in animated cartoon work due to sharply defined images. Here the action meets the condition of minimum blur and maximum gap. Where the animation drawings are purposely strongly blurred in the direction of travel, a definite improvement will be noticed.

Stop motion photography of dimensional objects is especially vulnerable to the strobe effect. Again we have blur with maximum action gap. The solution here is more complex since in most cases it would be difficult if not impossible to intentionally blur dimensional objects in stop-motion photography.

Avoidance of action at 90° to the camera tends to minimize the problem. Also avoiding prominent lines and strong contrasts opposed to the path of action—particularly when the mass or object moves as much or more than its width between frames. Intricate designs or prominent lettering will sometimes fall in this category even when moved fairly slow. Careful attention to lighting, contrasts and action speeds will do much

(Continued on Page 60)

In 1835 the British mathematician and scientist, William Henry Fox Talbot, discovered a way of chemically dissolving the unexposed silver chloride in a photograph, leaving the silver image behind. Talbot's ability to fix the image, to make it permanent, represented a milestone in the history of photography.

The accomplishments of men like Talbot and the other pioneers provided the foundation on which motion picture photography was built. Today these early achievements seem trivial, dwarfed by the wizardry of modern chemistry

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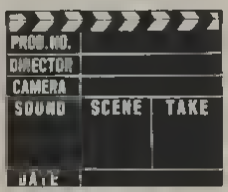

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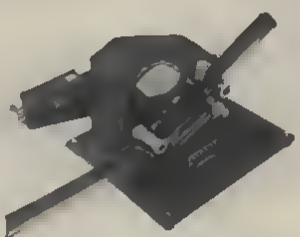

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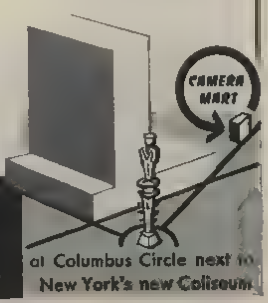

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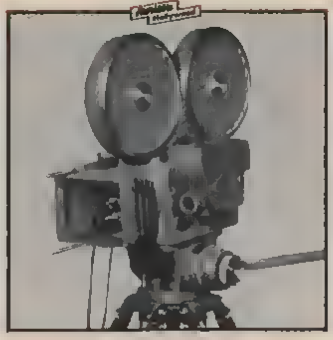

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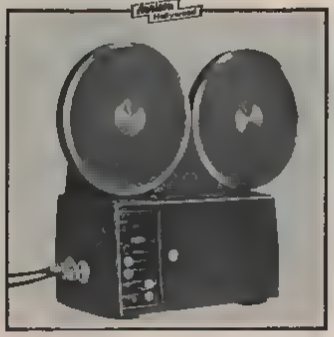

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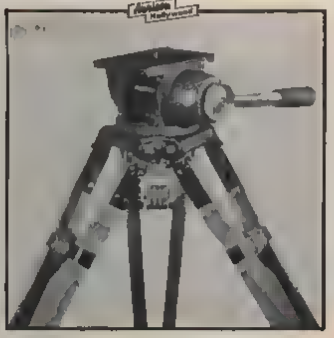
PORTABLE POWER SUPPLY UNIT — Model PS-21 . Silent in operation, furnishes 115-Volt AC power to drive "Single System" or "Double System" Auricon Equipment from 12 Volt Storage Battery, for remote "location" filming ★ $269.50

FILMAGNETIC — Finger points to Magnetic pre-stripe on unexposed film for recording lip-synchronized magnetic sound with your picture. Can be used with all Auricon Cameras. ★ $870.00 (and up)



TRIPOD — Models FT-10 and FT-10S12 . Pan-Tilt Head Professional Tripod for velvet-smooth action. Perfectly counter-balanced to prevent Camera "dumping." ★ $406.25 (and up).

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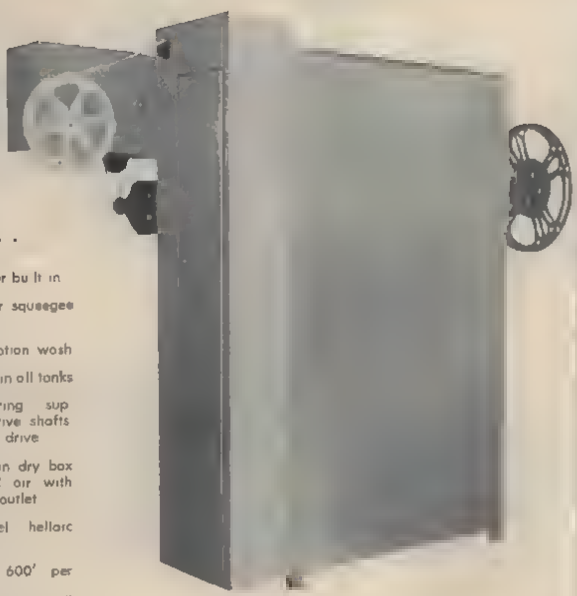

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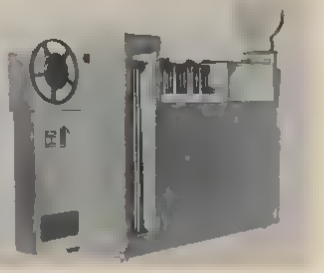


Combination Processor

Filmline Corp., Milford, Conn., announces its Model R-15 16mm combination reversal and negative-positive film processor with a low initial cost that makes it ideal for TV station film departments, universities, and industrial companies having own film production facilities.

A friction type overdrive film transport system features precision machined components designed to assure trouble-free operation. Tanks are fabricated from heavy-gauge stainless steel arc-welded to government specifications. Tank fittings and other parts that come into contact with films or solutions are also made of stainless steel. List price is $2 795 00. Literature is available.

Gun-camera Film Magazine

Traid Corporation, Encino, Calif., announces a new 100-ft magazine designed especially for the 16mm N-9 gun camera, marking first time this camera has been given the advantage of a 100-foot film-load without requiring alterations to camera. New magazine extends dimensions of the N-9 by only 11/32" top, and 1" end. It is expected to find wide use in missiles and aircraft where space is at a premium.

A heater and thermostat, which draws 1 amp of power, permits operation from 65° F. to 165° F.

Title Printer Improved

S.O.S. Cinema Supply Corp., 602 West 52nd Street, New York 19, announces that its TEL-Animaprint hot press title printer has been improved with a thermistor and electronic assembly that maintains consistent heat, which is used in the process that employs regular printer's type and white or colored ribbon foil to produce titles on opaque or clear plastic materials, pa-

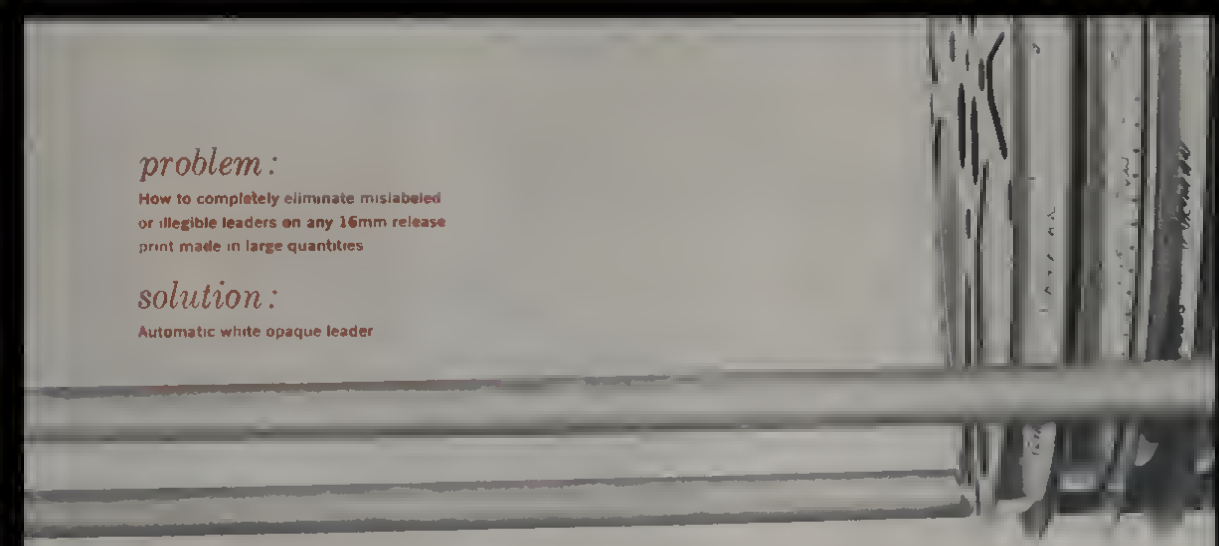
(Continued on Page 14)

problem:

How to completely eliminate mislabeled or illegible leaders on any 16mm release print made in large quantities

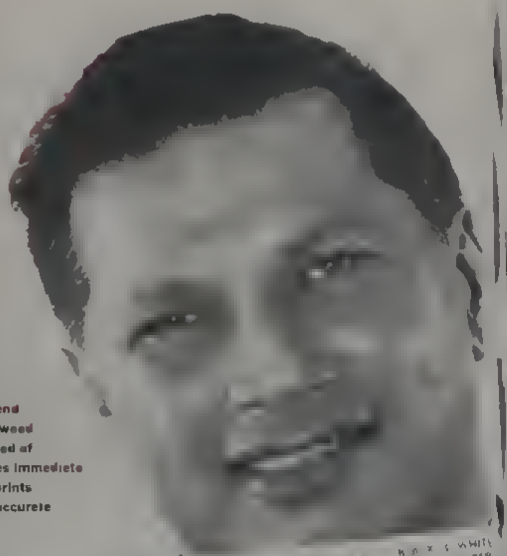
solution:

Automatic white opaque leader

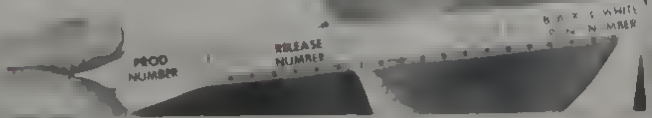


At CFI hand labeling the head leaders on large quantities of release prints is obsolete. Now, from first print to the last, this important job is done automatically.

Film title, production number, air date and other essential information is inscribed only once on the negative. This data is "printed through" onto the head leader of each release print. This portion of the leader is then reinforced with white opaque cellophane tape. Since the head leader becomes an integral part of the film itself, there is no need for the usual splicing. The result is a more durable leader, which is 100% accurate and easy to read.



Sid Solow, Vice President and General Manager of CFI Hollywood shows how the new method of labeling leaders makes immediate identification of release prints easier and more accurate



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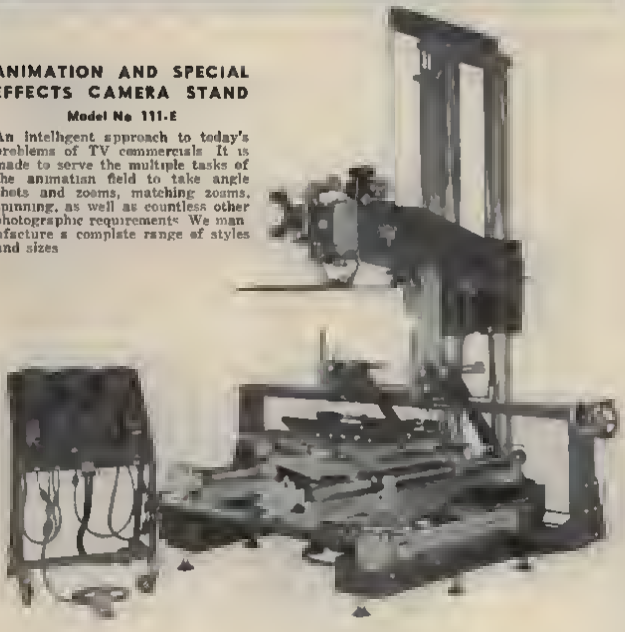

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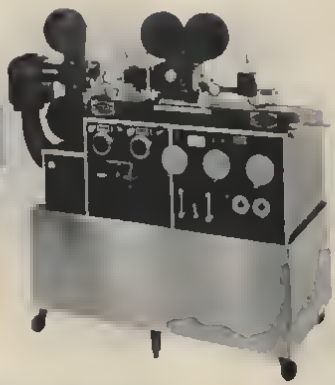

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WHAT'S NEW

(Continued from Page 12)

pet, cardboard, etc Present owners of TEL-Animaprint equipment may purchase the heat control and install it themselves in less than 20 minutes, according to S.O.S List price of kit is $119 50 TEL-Animaprint with control includes lists for $495 00.

Butt Splicing Blocks

The simple tools for making efficient butt splices of either 16mm or 35mm film, and ¼ inch magnetic tape are available from Florman & Babb, Inc, 68 West 45th St, New York 36. These are F&B Butt Splicing Blocks which enable any film worker to make durable film splices, using Mylar tape, in three simple steps Made of anodized aluminum, blocks are available in four sizes for 16mm and 35mm film, ¼-inch magnetic tape, and a combination model that takes all three.

Non-Flam Film Cleaner

Eastman Kodak Company, through its dealers, offers a new Kodak Film Cleaner that eliminates any hazard from flammability in cleaning black-and-white and color negatives or transparencies Solution is applied with soft lintless cloth to remove dust and dirt from films Four-ounce bottle costs 90 cents.

Magnetic Playback

A magnetic playback conversion unit is offered by Binghamton Magnetic Industries, Inc., 40 Wall Street, Binghamton, New York, which converts any Bell & Howell Filmosound projector for erase-proof magnetic playback of 16mm sound-striped films Unit permits magnetic and optical tracks to be reproduced individually or simultaneously with no change of film threading. The BMI unit scans at 28 frames per second and frequency response conforms with SMPTE standards List price is $99.50. Distributor is Williams, Brown & Earle, Philadelphia

Focuser and Boresight

HI-C Products, Box 455M, Pasadena, Calif, offers a practical, low-cost full-aperture focuser and boresight for Filmo Series 70, and Auricon Cine Voice and Pro cameras Among uses for device is military tracking applications, critical focusing, checking parallax of present finders, title centering, checking lens accuracy, and microscopic filming. Prices range from $36 50 for standard Model F for Filmos to $49.50 for the Auricon cameras.

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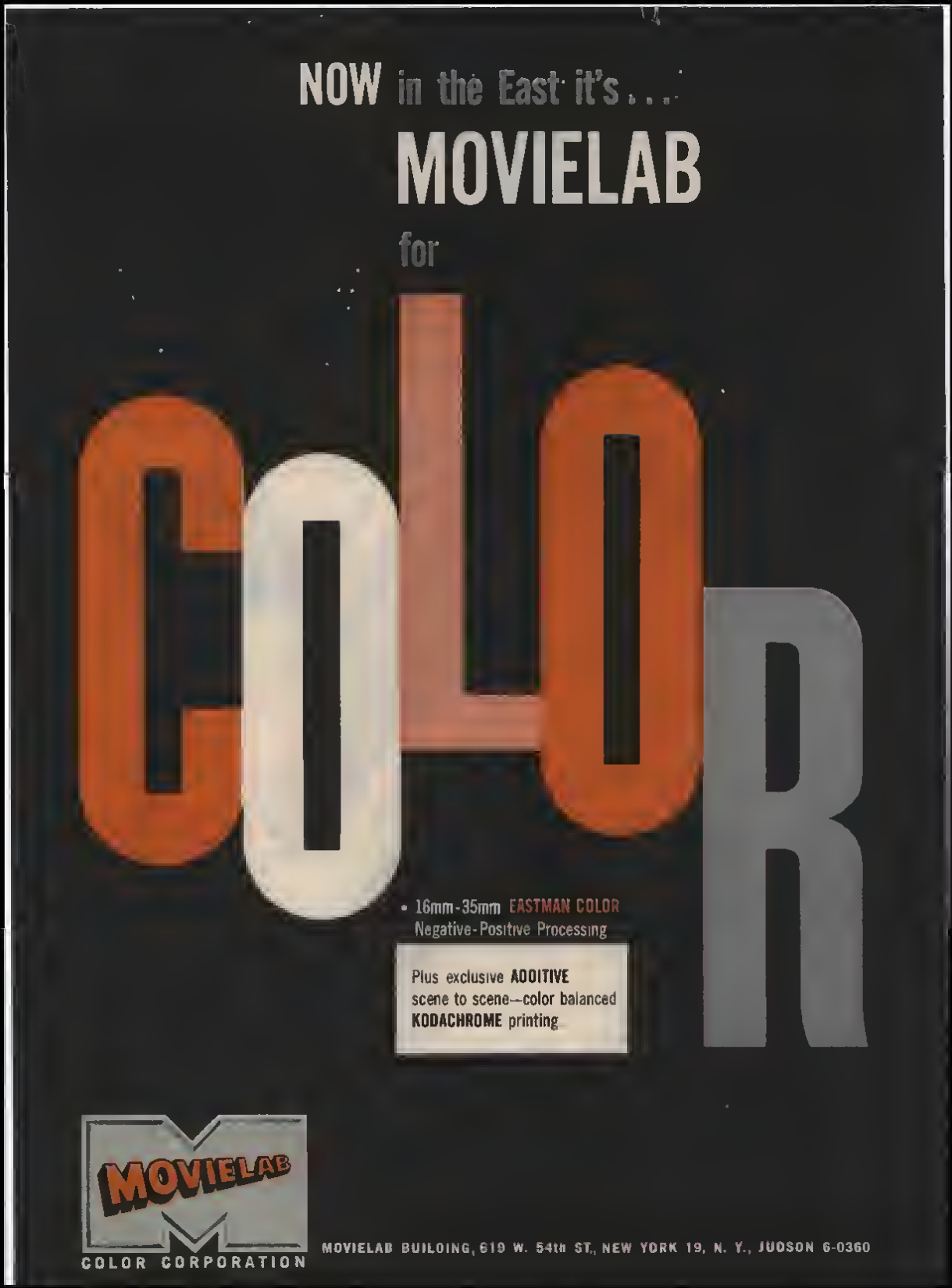
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"Arriflex 35 was with me when I shot the Cinemascope color short about the 'A Bomb' called 'Survival City'. Travelogues and documentary pictures—in Cinemascope or 'plain'—both in foreign countries and in the United States were taken with my Arriflex 35. Arriflex was the only camera we had with us—no others could have done the job as well!

"Because it is a reflex camera, the Arriflex 35 has resolved our photographic problems. With an Arriflex 35 you know what you're getting."

Photograph shows Jack Painter, a veteran of 39 years of service with Movietone News, Inc shooting a street scene with his Arriflex and Pan Cinor model 150 varifocal lens.

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Photographic Assignments

Who, where and what the industry's cameramen were shooting last month

*Asterisks indicate television film productions

ALLIED ARTISTS

● Floyd Crosby, ASC, "War of the Satellites" (Roger Corman Prod.) with Susan Cabot and Dick Miller. Roger Corman, producer-director.

● Ernest Haller, ASC, "Hell's Five Hours" with Stephen McNally and Coleen Gray. Walter Hannemann, director.

● William Margulies, "Dateline Tokyo" (Nacirema Prod.) with Michi Kobi, Norman T. Herman, producer director.

● William Whitley, ASC, "Tucson" (CinemaScope and DeLuxe color, shooting in Tucson, Ariz.) with Mark Stevens, Forrest Tucker and Gail Kobe. Tom Carr, director.

● Lothrop Worth, ASC, 'Teen Age Mother' with Norma Moore and Robert Vaughn. Walter Doniger, director.

AMERICAN NATIONAL

● Monroe Askins, "Tombstone Territory"* (Ziv TV) with Pat Conway. Various directors, "Target"* (Ziv-TV) Eddie Davis, director.

● William Bradford, ASC, "Highway Patrol"* (Ziv TV) with Broderick Crawford. Monroe Askins, director.

● Edward Cronjager, ASC, "Highway Patrol"* (Ziv TV) with Broderick Crawford. Leon Benson, director, "Sea Hunt"* (Ziv-TV) Various directors.

● Bob Hoffman, "Harbor Command"* (Ziv TV) with Wendell Corey. Various directors, "Tombstone Territory"* (Ziv-TV) with Pat Conway. Eddie Davis, director, "Target"* (Ziv-TV) Eddie Davis, director.

CALIFORNIA STUDIOS

● Lucien Andriot, ASC, "The Life of Riley,"* with William Bendix. Jean Yarbrough, director.

● William Margulies, "Have Gun Will Travel"* (Filmaster Prods.) with Richard Boone. Andrew McLaglen, director.

● Hal Mohr, ASC, "Playhouse 90"* David Swift, director.

● Fleet Southcott, "Gunsmoke,"* (Filmaster Prods.) with James Arness and Dennis Weaver. Ted Post, director.

● Lester White, ASC, "Boots & Saddles—The Story of the Fifth Cavalry"* (Calif. National Prods.). Wm. Hole and B. Kowalski, directors.

COLUMBIA

● Gert Andersen, ASC, "Shirley Temple's Storybook"* (Screen Gems) Robert Sinclair, director; "Playhouse 90"* (Screen Gems), Arthur Hiller, director.

● Wilkie Cooper, "The Whole Truth" (Romulus Films shooting in England) with Stewart Granger and Donna Reed. John Guillermin, director.

● Kit Carson, "Father Knows Best"* (Screen Gems) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

● Henry Freulich, ASC, "Wild Bill Hickok"* (Screen Gems), with Guy Madison and Andy Devine. Louis King, director.

● Burnett Guffey, ASC, "Me and the Colonel" (Wm. Goetz Prods., shooting in France) with Danny Kaye and Curt Jurgens. Peter Glenville, director.

● Fred Jackman, "The Case Against Brooklyn" (Morningside Prods.) with Darren McGavin and Maggie Hayes. Paul Wendkos, director. "Casey Jones"* (Screen Gems) George Blair, director.

● Charles Lawton, ASC, "Gunmen's Walk" (CinemaScope & Technicolor, shooting in Arizona) with Van Heflin, Tab Hunter and Kathryn Grant. Phil Karlson, director.

● Irving Lippman, "Casey Jones"* (Screen Gems), George Blair, director; "Papago Wells" (Rorvic Prods.) with Rory Calhoun and Barbara Bates. Ray Nazarro, director.

● Oswald Morris, "The Key," (Highroad Prods.; shooting in England) with William Holden and Sophia Loren. Sir Carol Reed, director.

● Gilbert Warrenton, ASC, "Casey Jones"* (Screen Gems) George Blair, director, "Adventures of Rin-Tin-Tin"* (Screen Gems) with Lee Aaker and James Brown. Joseph Walker, director.

CENTAUR STUDIOS

● Gilbert Warrenton, ASC. Farmers Insurance commercial* Robert Walker, director.

WALT DISNEY

● Gordon Avil, ASC, "Zorro"* with Guy Williams. Various directors.

● Walter Castle, ASC, "Andy Burnett"* with Jerome Courtland. Lewis Foster, director.

● Ray Fernstrom, ASC, "Circarama U.S.A." (aerial photography) James Algar, director.

● Fred Gately, ASC, "Annette"* with Annette Funicello, Charles Lamont, director.

FOX WESTERN AVE.

● Lloyd Ahern, ASC, "How to Marry a Millionaire"* Danny Dare, director.

● Nick Musuraca, ASC, "Sergeant and the Lady"* Howard Schuster, director.

● Frank Redman, ASC, 'The Perry Mason Show,"* with Raymond Burr. Various directors.

● Charles Van Enger, ASC "Broken Arrow"* with John Lupton, Ralph Murphy, director, "How to Marry a Millionaire"* Danny Dare, director.

FILMCRAFT STUDIOS

● Virgil Miller, ASC, "You Bet Your Life,"* with Groucho Marx, Robert Dwan.

GENERAL SERVICE

● James Van Trees, ASC, "Burns & Allen Show,"* (McCadden Prods.) with Gracie Allen and George Burns. Red Amateau, director; "Bold Journey"* (Advenco Prods.) Sherman Rose, director.

● Harry Wild, ASC, "Bob Cummings Show,"* (Laurmae Prods.) with Bob Cummings and Rosemary De Camp. Bob Cummings, director.

● Neal Beckner, "The Adventures of Ozzie & Harriet,"* (Stage 5 Prods.) with Ozzie, Harriet, David & Rickey Nelson. Ozzie Nelson, director.

● Arch Dalzell, "Panic"* (McCadden Prods.), Various directors.

● Fred Gately, ASC, "Bold Journey"* (Advenco Prod.) Harold Daniels, director.

● Burt Glennon, "Now Hear This"* (W J. Enterprises) Paul Harrison, director.

(Continued on Page 48)

PROGRESS — LOYALTY — ASC — ARTISTRY

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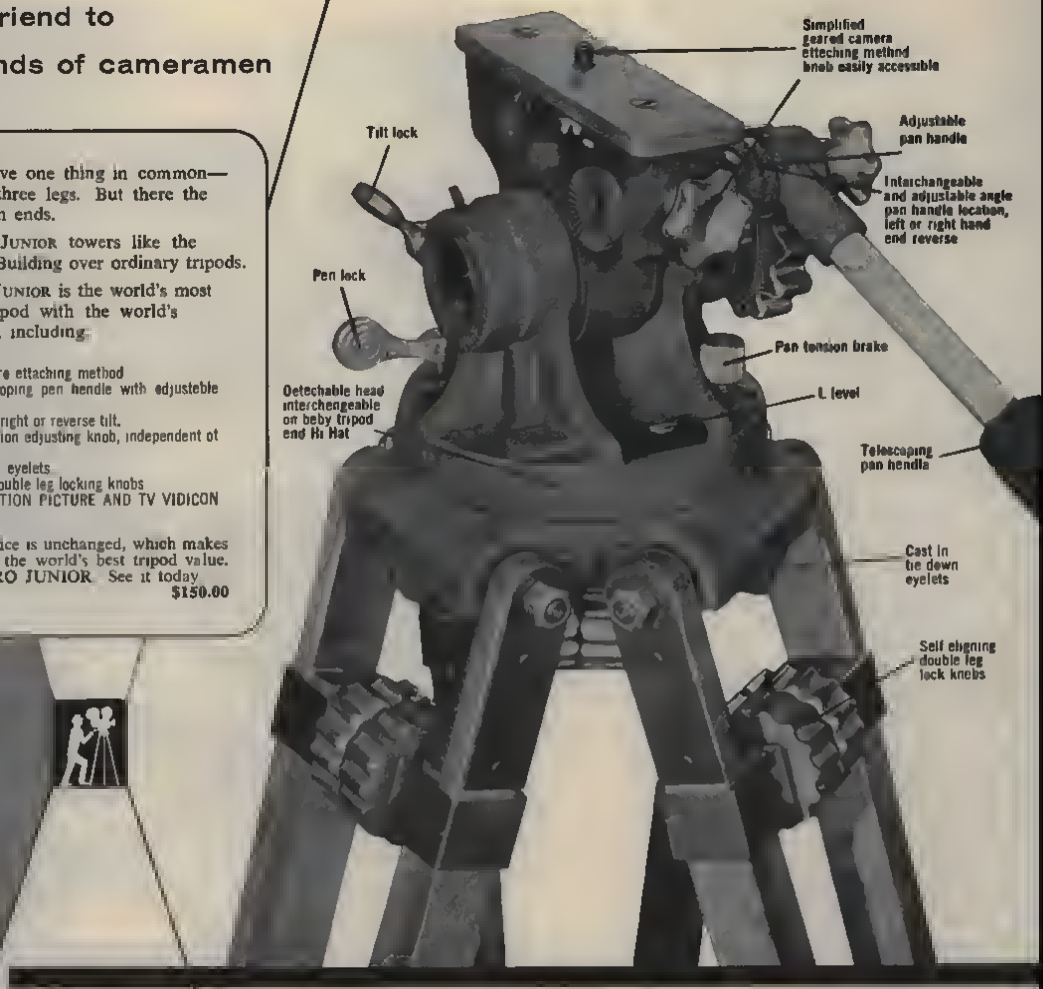
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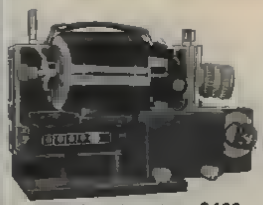

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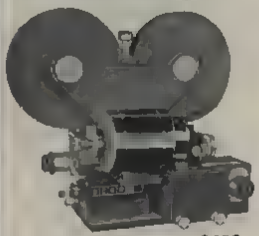

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For studio or location. Folds into one compact unit. Can be used with professional or semi professional tripods.

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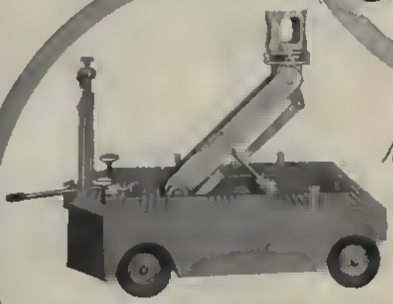

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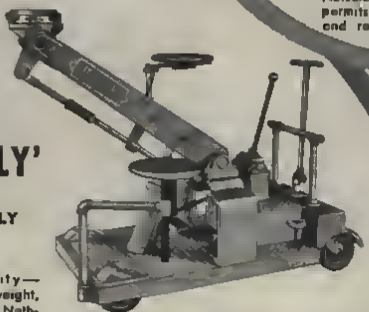

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News briefs about the A.S.C., its members, and important industry personalities

CAMERAMEN and wives mingled at ASC's once-a-year Open House at Society's clubhouse in Hollywood last month to meet old friends and enjoy refreshments and buffet dinner

ASC PREXY Burnett Guffey (chatting with Mrs Ellis Carter at left) sports board which he grew while on location in France. At right are Mr and Mrs. Clark Ramsey

Next Meeting of the American Society of Cinematographers is scheduled at the Society's clubhouse in Hollywood for January 20, at which time the cinematographers will play host to important personnel of the Photographic Division of the U. S. Air Force based on Lookout Mountain in Hollywood. This is the group that has photographed most of the government's top secret atomic and hydrogen bomb tests since 1948.

Some unclassified films representative of the Air Force's film production activities will be screened, including a print of "The Thunderbirds," which demonstrates acrobatic flying by an outstanding Air Force team. The film was selected for screening at the Nice (France) Film Festival last year.

Hal Mohr, ASC, was elected Secretary of the Motion Picture Industry Council at the organization's annual meeting last month at the Beverly Hilton Hotel. Jerry Wald, producer, was elected president, actor Ronald Reagan, first vice-president, Frank Nugent, 2nd vice-president, and Steve Broidy, treasurer.

Hal Mohr, ASC

Norwood L. Simmons, A.S.C. Associate, last month was named assistant manager of the West Coast division of Eastman Kodak's motion picture film department. Previously he was chief engineer of the division.

Vaughn C. Shaner, A.S.C. Associate, succeeds Simmons as chief engineer. The division offers technical service to professional motion picture studios which use Eastman professional motion picture films.

ARTHUR MILLER, ASC, points to vintage motion picture camera which Paul Eagler, ASC, (left) donated to ASC's Museum of Cameras

Paul Eagler, ASC, veteran cinematographer and for the past several years a process photography specialist, recently donated to the American Society of Cinematographers' Museum of Cinematographic Equipment a French DeBrie 35mm motion picture camera, circa 1920. Eagler used this camera in shooting many of Charles Ray's memorable films. He retired the camera in 1923 in favor of a new Bell & Howell, which became for a time the professional's most popular 35mm camera.

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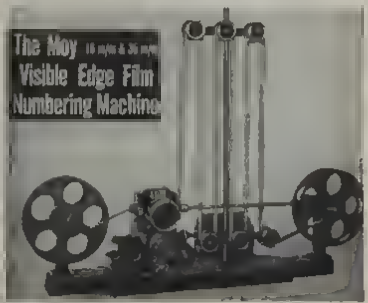

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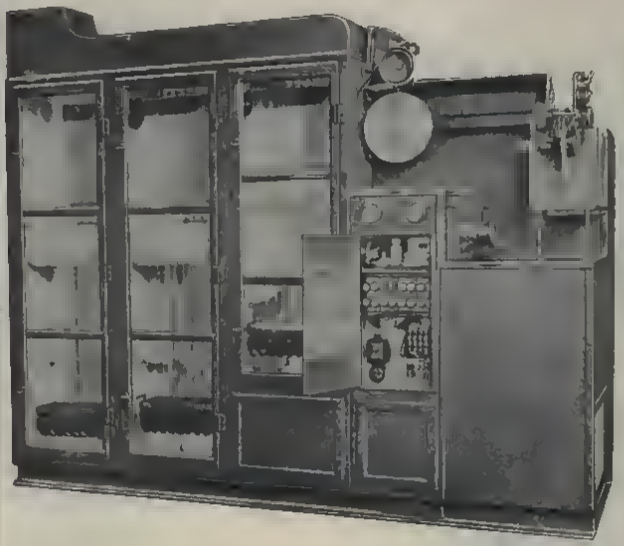

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FOR AN EXCELLENT BUY IN ANIMATION & SPECIAL EFFECTS CAMERA STAND, SEE PAGE 29

REALISTIC EFFECT of night or day in a scene is a matter of discerning use of the proper lighting to achieve the utmost illusion of naturalness, according to Charles Lang, Jr., ASC, who directed the photography of "Wild Is the Wind."

"WILD IS THE WIND" IS REALISTIC!

Charles Lang's discerning camera artistry is revealed in the location scenes which he filmed for this Hal Wallis production in a wide range of weather conditions with extraordinary uniform results.

By ARTHUR E GAVIN

REALISTIC IS A QUALITATIVE label we like to apply to most entertainment motion pictures because movies are supposed to mirror actual happenings in actual locales. We know, of course, that this is not always so; that many movies are filmed on replica sets on studio lots and on nearby locations that approximate in appearance the distant locale where the story supposedly takes place.

Even when a picture is shot in the actual locale, the cameraman does not always succeed in capturing photographically its mood and atmosphere to the degree that the action, when it reaches the screen, becomes more realistic and believable as a result.

It is therefore more than ordinarily notable when a picture comes along that is outstanding for its pictorial realism, which naturally makes the production itself above average. Such a picture is "Wild is the Wind," produced by Hal Wallis for Paramount Pictures and pho-

tographed in black-and-white and VistaVision by Charles Lang, Jr., A.S.C.

This realism in the camera work was intentional, preplanned and pursued diligently to the end. "The very location for the many exteriors," Lang says, "was an inspiration. Nearly all of the exteriors for the picture were shot on a real sheep ranch in Nevada—a rugged picturesque layout whose venerable ranch house, weathered barns and lovely grazing meadows never could have looked quite so real duplicated on the studio lot. It was a genuine challenge, therefore, to photograph action here in such a way that none of the earthy mood nor pictorial flavor of the place would be lost in putting it on film."

"Wild is the Wind" is a taut portrait of a mourning widower-husband's conscience-stricken memory of his dead wife, which wreaks havoc to his life with his new mate, sister of his deceased wife, whom he has imported from Italy to his Nevada sheep ranch. Anna Magnani portrays Gioia, the tempestuous arrivee from Italy who soon discovers in her marriage to sheep-rancher Gino, played by Anthony Quinn, that she lives in the shadow of a ghost, that life is not what she expected because Gino cannot forget his first wife. Neglected and frustrated, in her restlessness she becomes involved with a handsome young Basque, her husband's ranch assistant, and this leads to a crisis involving all members of the household and just about every operation of the vast ranch.

"Wild is the Wind" went before the VistaVision cameras on location at the Reno, Nevada, Airport where scenes depicting arrival of the disheveled and travel weary bride-to-be were filmed meeting the man soon to become her husband. The following day, the company began two weeks of intensive location filming at the sheep ranch at Gardnerville, near Carson City. Moody weather hounded the company. Snow, rain and clouds, plus heavy wind that battered men and equipment became familiar to the cast and crew. It was in such an atmosphere—never evident in a single scene in the picture—that cinematographer Lang meticulously photographed the scenes planned for this location.

"Production problems being what they are today," Lang said, "cameramen no longer shoot just when its sunny. With production costs today amounting to thousand of dollars per hour, a film company on location must be highly flexible, readily adjusting to changing conditions and successfully meeting unlooked for contingencies. Photographically, we did just that. With the daylight constantly changing because of the variable weather that prevailed, it was necessary to take a sort of middle road with exposures so that we would not have scenes made in bright sunlight conflicting directly with others filmed in overcast. We made do with the weather at hand at all times except when it was storming — that is, we turned a bad weather or lighting condition into an advantage, we made dull days actually a part of the story."

OSCAR-WINNING Charles Lang Jr., ASC, has had almost every leading actress before his discerning camera lens. "Wild Is the Wind," like most of his previous pictures, was produced at Paramount Studio.

Because days were changeable, if not entirely unpredictable, weatherwise, Lang explains, there was always the opportunity to make added scenes or pick-up shots to match shots previously made say, on a bright, sunlit day. "On dull days, we shot scenes where this type of light could be used to advantage. But we could always be sure that more sunny days would follow." Lang said.

The company worked early and late, utilizing every minute of the daylight hours. "When filming a picture," said Lang, "I try to keep right on shooting just as long as there is enough light to produce results in keeping with my standards for photographic quality." This principle Lang applied with great care when filming the sequence of shots of the rancher at his wife's graveside, which closely follows the opening of the picture. The scenes involved only Anthony Quinn, and the company began shooting late one afternoon—clear, and sunny, but with the sun low, producing slanting shadows among the lonely, weather-beaten gravestones.

Because director George Cukor felt the dialogue in these scenes was very important to setting the mood of the story, there were a great many rehearsals followed by takes, and the sun was slipping behind the distant hills before Cukor was finally satisfied. Here indeed was a problem—how to match the next few shots with those made earlier in the afternoon in which bright sunshine and deep shadows clearly showed. Lang's

(Continued on Page 54)

LANG'S TYPICALLY incisive lighting is demonstrated in this scene in which Miss Magnani's emotions are visually dramatized by pinpointing light on her face.

OBLIVIOUS OF CAMERAS, golf pros play shots and gauge puts with same zeal they display in National competitions. Above, left, cameras mounted on mobile tower and on station wagon roof catch action as golfer hits out of sand trap. At right, three cameras focus on Ed Fergol as he sizes up green before putting. Golf competitions are not "staged" for "All-Star Golf" but are the real thing.

HOW "ALL-STAR GOLF" IS SHOT FOR TV

Six 16mm cameras follow players from tee to green for eighteen holes recording variety of angle shots of golf pros in actual competition.

By JOSEPH V. MASCELLI

A UNIQUE METHOD of factual cinematography which employs six 16mm cameras shooting simultaneously is the key to the success of "All Star Golf," popular TV sports series. Following success of the method which he used for shooting "Championship Bowling," another video film series, producer-director Sidney C. Goltz has adapted the multiple camera filming system to golf to bring fairway enthusiasts television's only nationally sponsored program of actual match play golf in which the players vie for cash prizes.

When the "All-Star Golf" pilot film was shot in Chicago it required two and one-half days to complete, camera and sound men shook their collective heads in disbelief when Goltz insisted that a complete match, together with three sync-sound interviews, could be shot in one day. The daily filming of the show is now a routine accomplishment but the planning and organization that made this possible goes back almost two years and covers not only the shooting problems but the creation of a uniquely designed five-viewer editing set-up to handle the mass of film in a speedy, efficient and orderly manner.

The six 16mm cameras—two Mitchells and four Bell & Howell Filmos (three equipped with 400-ft. magazines and zoom lenses—grind out an average of 20,000 feet of Eastman BGX on each match. A grand total of over one half million feet of film was exposed to complete the first twenty-six shows of the series. Since less than two thousand feet of negative is used in each finally-edited 60-minute show, which includes score boards, animated diagrams, and commercials, the net film consumption ratio is approximately ten to one. The six camera crews, five from Hollywood and one from Chicago, where the show originates, work under director of photography Ralph Gerling, a young movie veteran of considerable experience.

Filming is similar to live television practice since no retakes are made and shooting continues regardless of inclement weather or fluffs on the part of the narrator. No reflectors or booster lights can be employed since they would shine in the golfers' eyes and distract, if not completely blind them. No shots are faked; everything is filmed exactly as it occurs and the camera crew is not allowed retakes nor permitted to stage any action—not even a closeup of a ball going into the cup. While the shorter Par Three holes require only two set-ups, the longer holes require three because of the additional approach shots. Filming a two-player match averages about fifty camera set-ups, each necessi-

DIRECTOR of photography Ralph Gerling (right) discusses upcoming shot on Palm Springs course with (L to R) Alex Bradora and John Braddock

tating the careful placement of six cameras. All this, plus sync-sound interviews before the game, on the tenth hole and after the match, demands the utmost planning and coordinated movement to achieve filming in one day.

A dozen Golfmobiles, two station wagons and a custom built twenty-eight-foot hydraulic lift, costing over $4,000, are used to transport the crew and provide shooting platforms. Film editor John Gable consults and advises on camera placement, thus eliminating many cutting problems on the spot.

A Magnasync-equipped sound truck records both the crowd reactions and a running commentary. It's Goltz's belief that sound presence can only be captured by on-the-spot recording—not by adding canned sound effects and narration later. Multi-camera technique plus sync-sound closely approximates live television methods and effectively imparts a vicarious "you are there" atmosphere to the filmed result. While admittedly more expensive, it is this "spare no expense" attitude on the part of executive producer DeMet that allows Sid Goltz and his crew to come through with a top quality show. Both cameras and sound men agree that no corners are cut and that everything necessary for obtaining the finest results is made available to them. This is perhaps the reason that *Variety*, in its review of the show, stated: "The camera work could hardly be better. Cameras zoom in for extra curricular color, facial expressions of the players, their measuring of the green and attitudes of the onlooker."

Camera angles are chosen with great care so that every facet of the game is recorded in master long shots, medium shots and closeups, combined with zoom shots to enhance the most dramatic plays. Careful placement of the cameras on one side (with the exception of the rear camera) prevents the golfers from being filmed in a "fake reverse" that would change their screen direction. While overall direction is handled by Goltz, director of photography Gerling and editor Gable have the responsibility of camera placement, since only they know what each of the cameras must cover individually in order that the necessary shots are recorded collectively.

"We make no attempt to kill the operating cameraman's initiative," remarked Ralph Gerling. "But, each man is reminded that he is part of a team and that unless he films his particular bit of the player's action using the lens assigned to him that it is impossible to capture the complete play in a series of perfectly matched cuts that present the game in a suspenseful, dramatic and technically perfect manner."

Variety in camera angles, lens choice and zoom effects are injected as the game progresses in order to keep the camera work from becoming a monotonous recording. On the tee-off the cameras may be placed in the following manner: a rear camera shoots back of the golfer as he drives off tee. Two side cameras: one is tight on golfer's facial expression and grip and the other on a full shot. A fourth camera will shoot a front three quarter long shot, while a fifth records crowd reaction. The sixth camera on the hydraulic lift is set up on the distant green.

On the green: the high camera films a diagramatic master shot of the play while a lower camera covers matching closeups. Another master long shot is filmed from the top of station wagon at the opposite end of the green. A ground level camera shoots matching closeups from the same angle while another camera, centered between the station wagon and the lift, captures closeups of the player's faces. The sixth camera films crowd reactions and pick up shots.

TO EDIT films from six cameras, editor John Gable employs the viewer setup and gang synchronizers pictured here

ON THE SPOT sound is recorded by Russ Ashley operating Magnasync magnetic recorder mounted in station wagon. Latter moves along with the cameras as players move from hole to hole.

The zoom lens is effectively, and often dramatically, employed not only as a cinematic device but as aid to editing. Goltz insists that zooming be restrained and justified by the action or editing. "After all," states Goltz, "that zoom lever isn't a pump handle!"

The zoom lens is sometimes used as a variable telephoto to hold the golfers constant size regardless of distance. It will often remain fixed when employed in this manner since its only purpose is to preserve an established image size. Zooming is often used to bridge continuity gaps by having the side camera pan and zoom from a tee-off, or an approach shot, toward the distant green. Or the rear camera, mounted high on the station wagon, may tilt up and zoom to telephoto position as the ball is driven toward the green. Both type shots carry the viewer from the golfer, in the foreground, to the more distant area, thus making for a smoother cut.

Since every stroke cannot be shown in an hour's time it becomes necessary to "telescope" or condense much of the game. This is done through use of animated diagrams to cover action not shown photographically and is greatly aided by the zoom lens' ability to bridge distance by zooming to the distant green.

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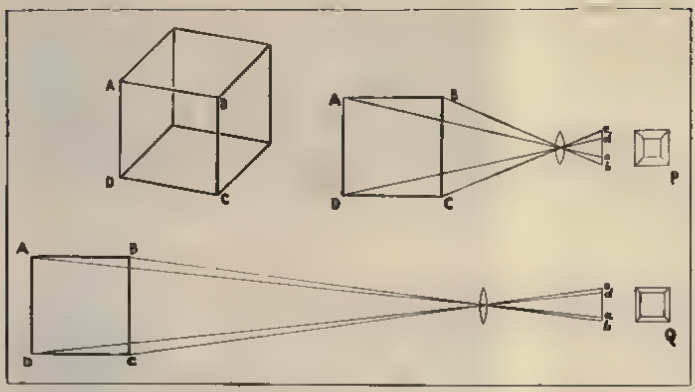

FIG. 1—Diagrams show effect on perspective when an object—a cube— is photographed with a one-inch lens (top) and a three-inch lens. Resultant pictures are represented at P and Q.

Perspective With A Purpose

Apparent perspective has special applications in motion picture photography.

By HARRY WALTER

PERSPECTIVE IS DEFINED in Webster's Dictionary as "The appearance to the eye of objects in respect to their relative distance and positions"—which is as good a point as any to start a discussion on perspective as it relates to cinematography.

Because a thorough knowledge of perspective can greatly influence a cinematographer's ability to achieve impressive pictorial composition in scenes, the subject rates along with exposure, depth of field, film emulsion characteristics, etc., for special study by the aspiring motion picture cameraman.

In addition to being a geometrical question, the appearance of perspective in a picture is also a psychological one. Perspective is altered chiefly through the use of lenses of appropriate focal length. One of the most common examples today is the way certain lenses are used in photographing automobiles for magazine ads or for TV commercials to enhance and emphasize the long, low lines that characterize 1958 models.

Considering the geometrical aspect of perspective, let us take for illustration the outline of a cube, Fig. 1. A side elevation is represented by A-B-C-D. If this cube is photographed with a lens, say, of one inch focal length, the result is that the horizontal lines of the cube will appear at c-d-a-h (top diagram) and the photograph will appear at P. Repeating the experiment with a lens three times the focal length (i.e., a 3 inch lens), in order to obtain a photograph of the cube so it appears the same size as when photographed with the one inch lens, it will be necessary to set up the camera three times as far away; the result will be as shown at Q in lower diagram of Fig. 1.

It will be seen that the lines in the photograph Q representing the edges or outline of the cube are now much closer together than in the photograph P. This illustrates in a simple way why the distances between objects appear to be less when a scene is photographed with a telephoto lens.

Two men standing, one a few steps behind the other, will appear to be standing close together when photographed at a distance with a long focal length lens; but if photographed at closer range with a one- or two inch lens, they will appear in the picture in

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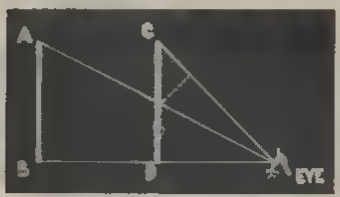

FIG. 2—In looking from one point to another the eye swivels in its socket and the extent of eye movement affects one's judgment of distance.

FIG. 3—Showing how apparent distance between two objects is altered by the simple expedient of using lenses of different focal lengths. F represents result with a medium long focus lens. G is result using lens of shorter focal length, while H represents greatly enlarged images secured with a telephoto lens.

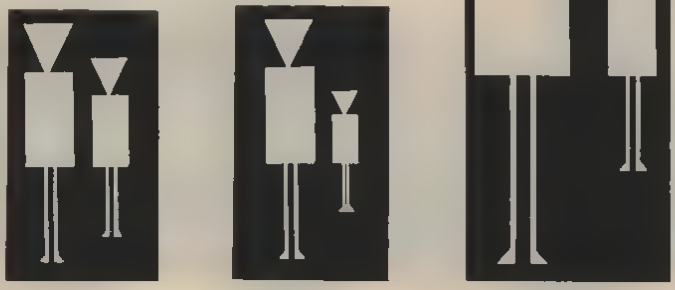

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FIG 1—Arri 1000-ft. blimp with all doors open, showing Arriflex 35 camera equipped with 1000-ft. magazines. Extreme silencing is a salient feature of blimp

New Arri "35" 1000-ft. Blimp

Addition of new soundproof blimp and 1000-ft. magazine converts 35mm Arriflex to an efficient studio production camera.

BY FREDERICK FOSTER

THE COMPACT and popular Arriflex 35mm camera, until now considered chiefly an auxiliary hand-held camera for making shots where a larger camera could not be used, becomes a full-fledged production camera for sound stage or location use with addition of the new Arri Blimp and 1000-foot magazine.

The first 35mm Arriflex appeared on the market about 20 years ago. Manufactured in Germany, it was the first motion picture camera incorporating the mirror-reflex type shutter which permits focusing and viewing through the taking lens — even while the camera is running.

From the very beginning, the Arriflex 35 was planned as a "system" camera. That is, its use and application could be extended by the addition of accessories. The advent of the Arri Blimp completes the long-planned complement of accessories, and for the first time makes this efficient little camera adaptable to the most rigid demands of major, industrial or technical film producers.

The new Arri Blimp had its first public showing recently before members of the American Society of Cinematographers in Hollywood. Here it was examined and carefully evaluated by the toughest critics in the industry — the major studio cinematographers. The consensus was that it had a brilliant future ahead, that it filled a vital need of cameramen everywhere.

Like its smaller brother, the 400-foot blimp introduced earlier, the 1000-foot model is designed to accept any recent model 35mm Arriflex, and it requires but a few minutes to convert this camera to a production camera and vice versa.

To combine the Arriflex 35 with the 1000-foot blimp, the regular DC hand grip motor is removed and replaced by the standard Arri synchronous motor. The combined unit is then placed inside the blimp where it rests on rubber blocks provided for sound insulation.

The Arri 35 thousand-foot blimp is designed to accept the standard 1000-foot Mitchell film magazine. For this a special adapter is first mounted on the magazine before it is attached to the camera. Otherwise, no other modification is required on the magazine proper, nor are any tools required to mount the adapter. The latter carries the sprocket magazine mouth of the regular Arriflex 35 magazine on its lower side, while the upper part is attached to the magazine and secured by means of a knurled screw and spring latch. These two components are connected by a flexible bellows. An important innovation provides for the magazine to virtually carry its own weight; while it is placed on the camera like any standard Arriflex magazine, it does not rest directly on the camera but instead on rubber buffers extending out from the interior blimp walls. The two sprockets of the magazine adapter are driven by the camera, while the magazine takeup spindle is driven by a separate torque motor which

FIG. 2—Arrow points to buckle switch, an optional feature, but vital where blimp is employed with Arriflex 35. Switch automatically stops camera motor in case of film jam or when end of film passes by.

FIG 3
Arri 35 Blimp closed View from operating side

1 Knob for adjusting geared detachable matte box
2 Latch for closing magazine door
3 Carrying handle
4 Adjustable matte box
5 Latch for closing front port
6 Window for observing distance and diaphragm scales
7 Follow-focus knob with detachable handle
8 Tape measure hook (located in film plane)
9 Studs for mounting Mitchell type finder (where desired)
10 Magnifying eyepiece with foam rubber cup
11 Pilot light
12 Remote diaphragm control
13 Latch for main door

FIG 4
Arri 35 1000' Blimp Rear-Side View

1 Pneumatic dampers make blimp cover close gently
2 Latch for torque motor accessory door
3 Carrying handles
4 Window for observing second diaphragm and distance scale bond
5 Additional follow-focus control
6 Telephone dial for turning motor and shutter by hand
7 Cable connection
8 Line fuse
9 Film footage window
10 Spirit level
11 On-off switch
12 Rear (3rd) follow focus control knob
13 Tachometer window

is located inside the blimp and connected to the magazine by a belt.

The through-the-lens focusing and viewing feature of the Arriflex 35 is, of course, retained and functions with the blimp in place. The regular camera door with finder optics is replaced with a special door and the blimp has its own optical system which connects to the camera. The magnifying eyepiece on the rear of the blimp is fitted with a flexible rubber eyecup and foam-plastic cushion which affords comfortable viewing. A feature is that the eyecup can be easily washed, providing a measure of sanitation where camera is used alternately by a number of persons. An auxiliary finder, such as the Mitchell or the Ceco, can be attached externally to blimp door where desired, for which mounting studs are provided.

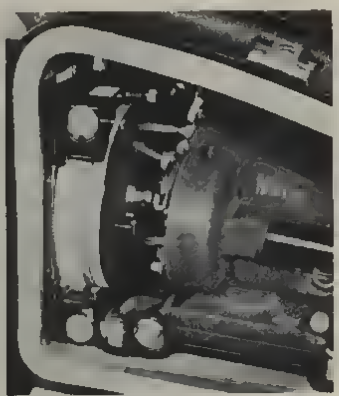

FIG 5—View of camera inside blimp, showing focusing and exposure scale bands (far left) which are visible through window when door is closed.

When the blimp is used with the Arriflex 35, both focusing and exposure adjustments may be controlled externally. A large knob located on the front left of the blimp (12, Fig. 3) actuates the lens diaphragm. Three different knobs are provided for focusing—one each on the front left and right side of blimp (7, Fig. 3, and 5, Fig. 4), and one at rear of blimp as shown at 12 in Fig. 4. These handy controls enable the camera operator to accomplish follow focus, when desired, unaided by an assistant — thanks to the continuous through-the-lens viewing feature. To further facilitate follow-focus, a detachable handcrank is available which may be attached to either of the side focusing knobs.

To aid the camera operator or assistant in setting and controlling both the lens diaphragm and focus, large detachable scale bands are provided on which footage and f/ stop marks may be penciled as a guide (Fig. 5). These bands are observable through a window (6, Fig. 3) on left side of blimp. The scale bands are individually calibrated for each lens and are changed as required to match the taking lens.

Another salient feature of the Arri blimp is the extra large rectangular front port fitted with a panel of optical glass. The port is sufficiently large to permit use of wide-angle lenses such as the 18mm Taylor-Hobson-Cooke or the 20mm Schneider Cinegon. The use of blimp and camera for anamorphic photography has been anticipated, and an accessory permitting use of anamorphic lenses within the blimp will soon be available, according to Kling Photo Corporation, U. S. distributors of Arri equipment.

Further external features include matte box with leather bellows (4, Fig. 3) which attaches to front of blimp. It is adjustable by means of geared struts; its depth measures 4" when collapsed, and 12" fully extended. This range of adjustment permits the matte box to be used with lenses of all sizes, from telephoto to extreme wide-angle. Two grooves are provided in the front frame of matte box to accept masks and mattes, while inside the blimp two filter frames are provided for standard 3"x3" glass filters.

Of further convenience to the camera operator when shooting are the two

(Continued on Page 46)

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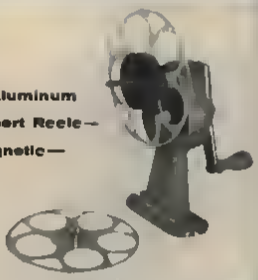

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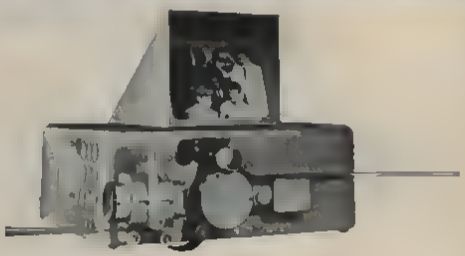

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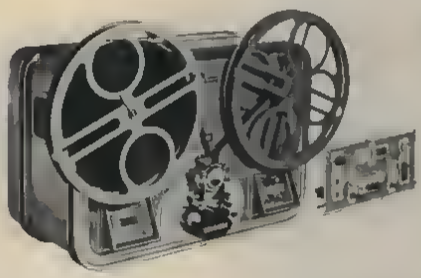

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Hollywood's Globetrotting Cameraman

During his career that has spanned more than thirty years of cinematography, Charles G. Clarke, ASC, has traveled farther and shot more film in foreign countries than any other studio cameraman. He's presently in Japan for 20th Century-Fox, filming "The Townsend Harris Story."

By CLIFFORD HARRINGTON

WHAT ANTHONY EDEN is to England, and John Foster Dulles is to this country, Charles G. Clarke, A.S.C., is to Twentieth Century-Fox studio. When there's something to be taken care of abroad, Charlie Clarke is the man sent to do it. His travelling bags are never quite unpacked when he returns home to his comfortable dwelling in Beverly Hills, because he knows the next telephone call may suddenly terminate the brief re-union with his family and he'll be on his way again the following day.

I encountered Clarke for the first time recently in Japan. He was directing the photography of Twentieth Century-Fox's production of "The Townsend Harris Story," which reportedly is to be re-titled "The Barbarian" before it is released. Actually, the bulk of the picture's scenes are scheduled to be shot in Japan, with the interior filmed at the Eiga Film Studio in Kyoto. Because this studio has no background projection equipment, there will be no process shots in the picture and it is understood that it will be entirely edited in Japan.

"The Townsend Harris Story," which stars John Wayne, is a picturization of the historic struggle of Townsend Harris to establish an American Consulate in Japan—the first of a western power to be set up there. John Huston is directing the production and Clarke is photographing it in CinemaScope on Eastman Color negative. Shooting is expected to continue until February.

In discussing with Clarke the problems which he had encountered thus far in shooting in this far away foreign land, he shrugged them off as nothing more than other veteran cinematographers had encountered when shooting away from the studio.

"Nevertheless," Clarke said, "foreign location shooting tests the mettle of any cameraman. For one thing, he must be ever ready to cope with sudden changes in production plans, and especially with unfamiliar and unpredictable weather. In Hollywood, we know that if the day starts with a foggy overcast, it generally blows over by noon so that we have bright sun to work with in the afternoon. Here in Japan, as I have so often encountered elsewhere, the weather performs differently. One never knows quite what to expect. We meet this situation by trying to make do with whatever light condition we encounter—sometimes a real problem when you're shooting in color."

When I visited Clarke the first day, the company was assembled near a hillside farmhouse, waiting for an overcast sky to clear. (It was a scene where sunshine was essential). Director Huston was making good use of the interval to rehearse a Japanese comedian—a giant Sumo wrestler, and American actor Sam Jaffe for a comedy sequence. Between rehearsals, Clarke discussed camera angles with Huston. By the time the sun finally broke through the clouds, an entirely different bit of action was filmed than had been planned for the morning.

While waiting for the sky to clear, Clarke fell to discussing the effect of unlooked-for weather on film production. "We often make good use of overcast days for shooting 'day-for-night' scenes. I personally prefer to make such

shots this way because on overcast days there are no sharp shadows to destroy the illusion." he said. "A difficulty in making 'day-for-night' shots this way," Clarke continued, "is trying to maintain the right balance between daylight and the artificial light that must be used additionally as daylight begins to fade in the late afternoon." Clarke had only recently completed a sequence of "day-for-night" shots on the Izu peninsula on the east coast of Japan, where several important sequences for the production were filmed.

Another problem which always exists in shooting on distant foreign locations, Clarke said, is matching the light from shot to shot and from interior to exterior where you don't have the advantage of daily "rushes" for reference. Although "rush" prints of each day's shooting were sent to the company from Hollywood, these invariably arrived too late to be of value as a day-to-day check on the camera work. Only a cinematographer of Clarke's vast experience could cope successfully with a problem of this kind, and the fact that he is the man the studio invariably sends when there's shooting to be done in some distant land indicates that his batting average is pretty high.

Clarke demonstrated how important it is always to be ready for the unexpected. While the company was shooting a scene depicting the landing of Townsend Harris from an off-shore American ship—a scene which involved some five hundred natives working as extras—a large school of porpoises appeared off shore. An event of this kind meant "meat on the table" for the villagers. They suddenly forgot their acting roles and scurried to their boats lying on the beach. Within minutes they were rowing out into the surf in quest of the mammals.

Director Huston, instead of being dismayed by the natives' sudden action, saw the story possibilities in it and quickly instructed Clarke and his camera crew to cover the action with their cameras. Clark sent his operator Till Gabbani out in one of the small boats with an Eclair Camerette with instructions to film close up action of the natives' pursuit of the porpoises. Back on shore, the large CinemaScope camera captured the action in long shots as the Japanese skillfully herded the porpoises toward shore like so many cattle. Huston hopes to integrate this footage into the picture for added human interest value.

One of the more formidable challenges which this exciting photographic assignment posed for Charlie Clarke was filming the burning of a small native village, which had been especially constructed by studio set-builders. Clarke had two of his cameras mounted on specially constructed dollies, which could be quickly rolled back in the event the flames swept toward the cameras too quickly after shooting started.

All of the forty-six set lighting units the company brought along from Hollywood were set up for this sequence. So that the blaze could be kept safely under control, a crew of fifty Japanese firemen along with several fire trucks stood by with hoses posed for action. First they were cautioned that in event they had to go into action, not to allow water to fall on the hot globes of the lighting equipment, which would cause them to explode.

When both cameras were in position and ready to roll, the fire was lit. The chief problem here was exposure. After the fire was started, it would be too late to calculate exposure with a meter. The cameras had to be "rolling" as the fire

(Continued on Page 54)

WITH THE 20th Century-Fox camera tilted over to viewing position, director of photography Charles G. Clarke, ASC, lines up shot through camera lens for scene for "The Townsend Harris Story," now being filmed in Japan. On far side of camera is his operator Till Gabbani.

PHOTOS AT left show Clarke's camera crew shooting scenes in Japan for "Townsend Harris Story." In third photo camera operator perches perilously behind camera mounted on platform in front of boat to shoot landing scenes for the hundred-year-old saga of an American Consul.

CONTRASTED HERE are two types of backgrounds used in major motion picture production. In above photo, background projection is employed to provide portion of composite scene in which hunter, crouching at left, stalks leopard in background scene. Photo at right shows scene without action in background, therefore requires no process. Instead, realistically painted backdrop is used.

The Science of Process Photography

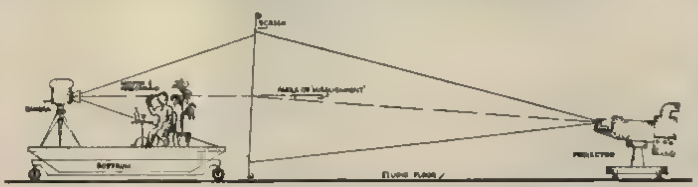
How background projection—one of the industry's most extensively developed sciences—is utilized to avoid costly location shooting in feature film production

By JOE HENRY

ONE OF THE MOST highly-perfected of cinematic sciences is that of background projection and process photography, which is employed in nearly every major feature film production today. Because of this science, many important scenes that ordinarily would have to be filmed in distant locales are shot in process within the studio at considerable saving in costs.

A scene of a hunter bringing down a leopard is filmed at close range, thanks to the science of process, which makes it possible to project a picture of the animal in natural habitat (filmed earlier) on a transparency screen within a few feet of the camera. The cameraman is thus able to photograph both the hunter and projected background together so the two components of the scene appear on the negative as having actually been shot on location. (See photo above.)

A closeup shot of two canoeists navigating turbulent rapids in a stream could not be satisfactorily photographed on location; but the same shot is a cinch to accomplish on the process stage in front of a transparency screen on which a realistic motion picture of turbulent rapids is projected from the rear. The canoeists, moving in a pond of water before the screen, can be better lighted and photographed than would be possible where a similar shot is attempted on a stream on location. And it is possible to photograph in the studio such atmospheric shots as a couple strolling a familiar Parisian boulevard, simply by projecting a motion picture of the orienting street scene on a transparency screen, before which the actors walk on a moving treadmill. In each case of



TYPICAL SET-UP for process photography. Background projector (far right) throws BG scene on translucent screen (center) before which actor plays role—all of which is photographed by camera at far left. Tilting of screen and slight misalignment of projector eliminate "hot spot" in screen image.

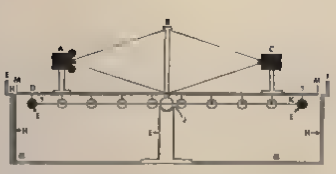


FIG A

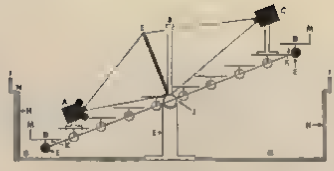


FIG B

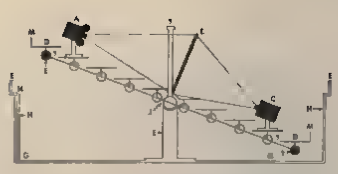


FIG C

SHOOTING UP OR DOWN on a transparency screen involves many problems. Cinematographer John Alton, in his book "Painting With Light," proposes the process stage arrangement illustrated above as a means of easily achieving angle shooting in process photography. In Fig. A, stage is level for normal process filming. In B and C, stage is tilted to afford desired camera angle for action at hand—ideal where it is desired to shoot up at background plates such as those of high buildings, clouds, aircraft in flight, mountains, etc., or down on appropriate background plates purposely photographed from an elevation.

course, the camera is so set up as to avoid inclusion of any part of the process staging equipment which would reveal the scene as process.

Each year usually sees some important new development in the science or equipment employed in process photography. One of the most important perhaps, is the triple head, double frame background projection setup developed at Paramount Studios in Hollywood under the guidance of Farciot Edouart, A.S.C., head of the studio's transparency department. (See photo below). The three projectors employed were developed by Mitchell Camera Corporation. One machine projects directly toward rear of the process screen, while the machines at either side project duplicate images on front-surfaced mirrors, which in turn direct them toward the process screen. This equipment is employed where the background picture is large and in color. One projector alone could not do the job because it could not project the picture with sufficient brilliance; with three machines projecting simultaneously an image of the same picture precisely superimposed, one over the other, picture brilliance is consequently multiplied and becomes adequate for the requirements of process photography in color.

Process shots employing background projection of a motion picture are used only when there must be some movement or action in the background; otherwise, where a special background must be incorporated into a scene, it is generally provided by a painted backdrop or cyclorama, a one-piece translucent screen carrying a huge photographic blowup and illuminated from the rear, or projected on a process screen by means of a slide.

The making of process shots in Hollywood studios is a task usually executed by a special department set up for this type of work. Often the director of photography assigned to the picture will not have a hand in making the process shots at all. Indeed, many studio cinematographers have yet to photograph their first process shot, although they may shoot the background "plates," which is the term applied to footage shot especially for background projection. Even this requires a special talent and understanding of the whole process procedure.

A basic work unit for process consists of the following:

1) Motion picture camera with interlock motor.
2) Translucent projection screen.
3) Background (BG) projector having interlock motor.
4) The background "plate" or film.

On the sound stage or in the transparency department, where the process shot is to be made, the BG projector is set up some distance behind the transparency screen. From this position it projects the BG plate. In front of the screen, the camera records the composite scene before it, which usually consists of the scene on the screen plus any players, props or scenery placed before it. (See diagram on opposite page.)

The interlock motors on both camera and projector insure that shutters of both machines open and close simultaneously. If they did not, a distracting flicker plus blank frames would occur in the finished picture. Exact synchronism between the two machines is therefore essential.

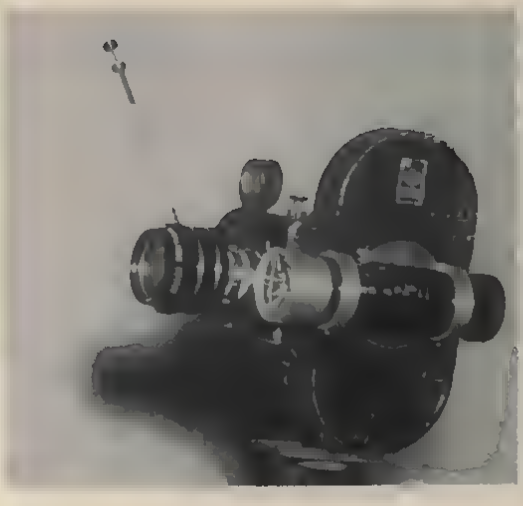
Another important detail is the positioning of the camera so it will not pick up a "hot spot" on the screen. In the set-up illustrated in the diagram, there is an intentional angle of "misalignment" between projector and camera which eliminates the "hot spot."

It sometimes happens that the picture projected on the screen appears bright-

(Continued on Page 56)

MOST ADVANCED process equipment is this double-frame, triple-head background projector set-up at Paramount Studio. Designed under supervision of Farciot Edouart, ASC, (seated) to meet needs of studio's VistaVision process, achievement won an Academy Technical Award for Paramount's engineers in 1956.

FIRST PRACTICAL mechanical fading device for 16mm cameras is this Wollensak fade and dissolve maker which can be used on most 16mm cameras.



EASILY MOUNTED before lens, fader remains there during all shooting. A two-stop allowance in exposure is required to compensate for light absorption by polarizers used in device.

Wollensak Fading And Dissolving Device

Employing polarization, this efficient mechanical gadget makes fades and dissolves in the camera with professional quality.

By ARTHUR ROWAN

FADES AND LAP-DISSOLVES, perhaps, are the most frequently employed of all effects in cinematography. Today, such effects in professional 16mm and 35mm film production are usually made in the film laboratory at the time of printing. However, there was a time when making fades and dissolves was part of the cameraman's job, and he made them in the camera as shooting progressed. Many movie amateurs do the same thing today, using a number of different methods. And camera-made fades and lap-dissolves are cutting costs for many producers of TV film commercials and business films where the time element is a dominant factor.

For these film makers, a new device recently introduced by Wollensak Optical Company, Rochester, N. Y., should prove of more than ordinary interest. It is the Wollensak Cine Fader, which is attached to front of the camera lens and, with the press of a button, produces fades of professional quality, accurately timed, in a period of 3½ seconds.

The device employs two polarizing filters, one passing before the other when activated by a spring drive set in motion via a cable release extending from the fader. What happens is that the light entering the lens is polarized and gradually diminished (for a fadeout) during the 90-degree rotation of the polarizing filter. A fadein is made by reversing the procedure—causing the rotary polarizer to gradually increase the amount of light passing through the lens and reaching the film.

The rotary polarizer is activated by a built-in, constant torque spiral spring that is wound, as required between fades, by turning the front, ratchet controlled element of the fader, similar to winding a watch. When released by finger pressure on a standard cable release that is part of the device, the spring imparts a uniform rotary motion to one of the polarizer discs. In winding the fader for and during use, a few back-and-forth movements of the winding ring are sufficient to re-vitalize it so that five complete fading cycles can be achieved before winding again becomes necessary.

One polarizer is mounted in a fixed position within the fader housing, while the other rotates with the arbor of the activating spring. Where uniform mo-

(Continued on Page 59)

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SNOWTIME MOVIE MAKING

Low temperatures and high reflectivity of snow pose problems for the inexperienced cameraman.

By JOHN FORBES

THE CHIEF PHOTOGRAPHIC problems of filming in the snow are both caused by the intense reflectivity of the white surface. Inevitably the sunlit expanse of a snowy scene throws an immense amount of light into the camera lens—and into your exposure meter, too. Often it will shoot the meter's needle completely off the scale, leaving you guessing as to how to expose your film. Probably the best technique of exposure metering in snowy weather is the "artificial highlight" method. By this means an artificial highlight in the form of a white card having a matte surface is used with an ordinary photo-electric exposure meter to obtain matched face tones. In taking such readings, find the largest stop number (i.e., smallest exposure value) which the combination of meter and highlight card can be induced to give in the prevailing light condition.

The second problem is that of contrast between the brilliant white snow and the darker people, shadow-areas, and so on. This can be controlled, however, so don't let it deter you. First of all, follow the old photographic rule: expose for the shadows, and let the highlights take care of themselves. Take your meter reading on that part of the scene which is most important—usually the people, or in some cases, a shaded area rather than the strongly-lit snow. And it is a very good idea to use some sort of filtering which will help reduce the contrast, too. A neutral-density filter (fairly heavy) is excellent if you've nothing in your scene which calls for color-filtering, or if you're using Kodachrome. Otherwise, for panchromatic films, use a 5N5, which is a combination of an Aero 2 and a .50 Neutral Density, which is very extensively used by professionals for controlling contrast in snow-scenes. If you're shooting snow-scenes at high altitudes, by the way, avoid the heavier filters—red ones especially—as they'll only increase contrast, and at high levels the thinner, clearer air often makes even a light filter correct the sky rather heavily.

Normal sunlight exposure for Kodachrome Film—any time, any place—is f/8. A wide expanse of snow on a brilliant day . . . scenes in which individual humans are less important than s-p-a-c-e . . . calls for f/11. If your figures are close to the camera and you want *them* right, even if the snow's a bit "over," shoot at midway between f/11 and f/8.

Here's another pointer. Blue sky and white snow team to produce a light that's more blue than that of summer. You can correct it, if you wish, by shooting through a Kodak Skylight Filter. This filter will likewise soak up much of the also-blue ultraviolet light frequently found in sun-snow vistas, especially at high altitudes. That's with Daylight Kodachrome Film! But if you prefer to shoot with Type A Kodachrome Film together with a Kodak Daylight Filter for Kodak Type A Color Film, you already have a film-filter combination that will both color-balance this indoor film for outdoor use and also absorb ultraviolet light.

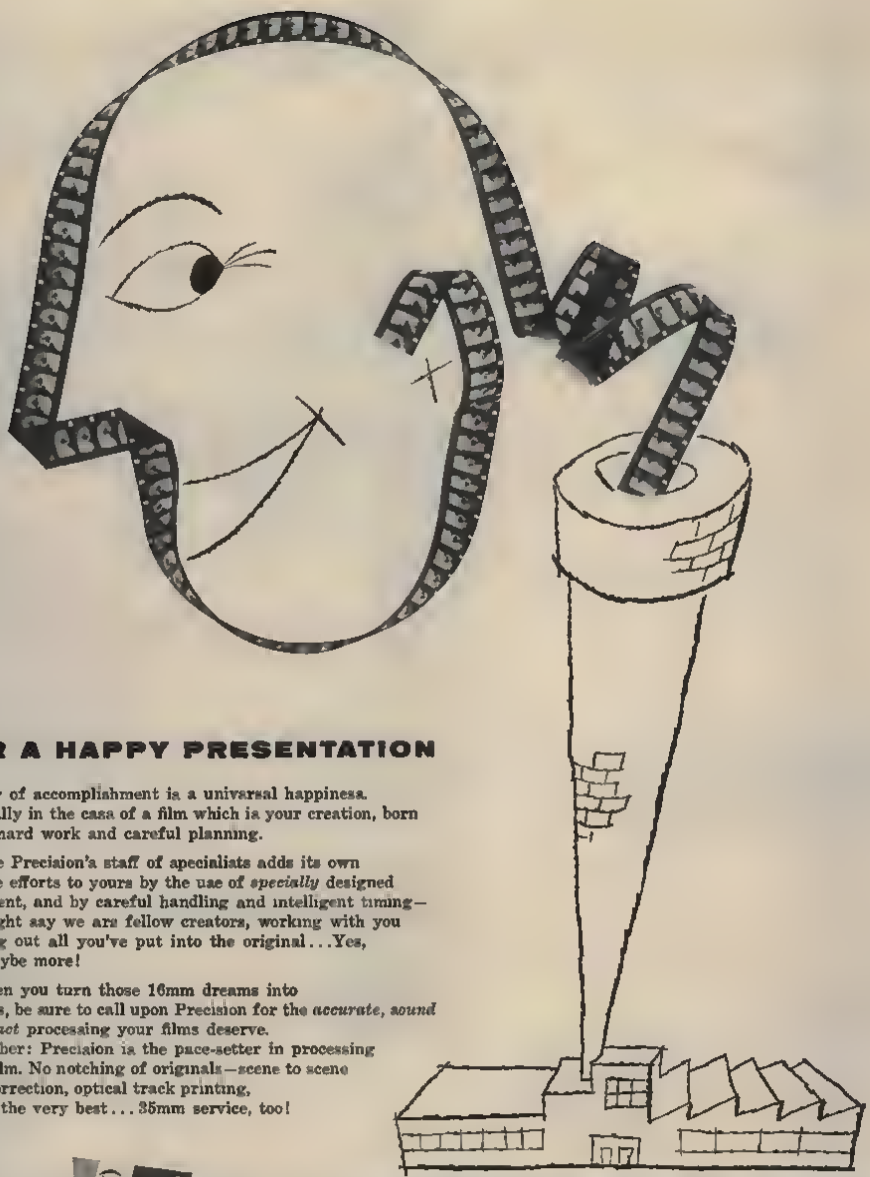
As it is almost impossible to shoot pictures during an actual blizzard, except with Tri-X film, you can produce an excellent substitute by shooting your "snow-storm" scenes in a surface wind, that is, a wind that is drifting the snow along the surface of the ground and up to about three feet in height.

When working in really cold regions, you may encounter a problem like photographers often face in the Arctic—the effect of extreme cold on the camera and its lubricants. It's a good idea to check with the manufacturer of your camera to learn what is the lowest temperature recommended for the oil with which it is lubricated. If you expect to be shooting in yet lower temperatures, have all the oil removed and then relubricate the camera mechanism with special oil that has been tested for extreme low temperatures. The camera manufacturer can advise you on this; also, the U. S. Weather Bureau has a special oil they use on their instruments in the Polar regions, and which is excellent for cameras.

Next—and this applies to some extent regardless of whether you're in extremely cold regions or just normally cold

(Continued on Page 46)

SNOW REFLECTS LOTS OF LIGHT! Blue sky and white snow team up to produce a photographic light that is more blue than that of summer. That thru's the blue ultraviolet light frequently found in snow vistas, especially at high altitudes. Here, filters are the answer.



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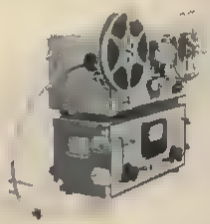

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PERSPECTIVE WITH A PURPOSE

(Continued from Page 28)

approximately the same relationship as they actually were when photographed. (See Fig 3). In the same way, the effect of perspective induced by specific lenses will influence the way scenic or compositional elements will appear. The landscape beyond a foreground of trees in a scene will appear to be further away, when photographed with a wide-angle lens, than when shot with a three inch telephoto lens.

Still, this phenomenon is not the whole story. Look again at the resultant pictures P and Q in the illustration of the cube in Fig 1. If these diagrams had been placed before you without any explanation, what would you have made of them? One might perhaps imagine both to be pictures of cubes; but P might be misinterpreted as a truncated pyramid while Q might be imagined a flat plane with bevelled edges. Or again, they might be considered nothing more than a pattern on paper.

The fact is that when solid objects are projected onto a flat surface the eye and mind cannot perceive any idea of solidity or size of the object without the exercise of imagination and reference to the sizes of known things. Consider the photographer who is shooting a picture of a tall cliff and places a man beside the cliff as a visual means of comparison. Without this reference the resultant scene might easily be mistaken for a miniature.

Consider again the instance of the two men, one standing slightly behind the other, as shown in Fig 3. But first refer again to Fig 1 and imagine B C is the nearer man and A-D the farther. Photographing the two men with a long focus lens, the resultant image will be something like F in Fig. 3, with the man at the rear appearing about three-quarters the size of the man ahead of him. This illustrates how perspective and the use of the right lens can be employed in a scene to put emphasis on a certain character or to diminish the aspect of another for dramatic emphasis or any other reason. By photographing the same men in the same position with a lens of shorter focal length, the man at the rear will appear about one-half the size of the man in front, as shown at G in Fig. 3. (Note how this result compares with that at point a-d and b-c in Fig. 1.)

To consider further, suppose now that, with the camera in the same position as when photographing the two men in G, Fig. 3, a lens of longer focal length is used. The result will be as shown at H. While the relative sizes of the images of the two men will be in the same ratio as in illustration G, both will appear much larger. In still photography the same result could be attained by enlarging the picture G.

After studying the results of using three different lenses to get the images F, G, and H, the reader will agree that the two men at G appear to be standing farther apart than at H. This is a peculiarity (the more distant objects in the picture appearing to have come nearer) you can test for your self. The small still camera snapshot is notable for the way it exaggerates distance. This exaggerated effect can also be demonstrated by holding a photograph before you, then gradually bringing it closer to one eye. The effect of changing perspective becomes more apparent when the picture gets very close to the eye, and in this position a magnifying glass (short focus lens) must be used to keep the picture in focus. And the nearer the picture is moved toward you, the less appear the separation of planes within the picture.

Why is this? When you see the picture on paper you cannot readily determine the exact size of objects with the scene without some orienting object of known size also being there as a means of reference. In the example in Fig. 3, we have a picture of two men (H). We know the size of the average man from experience but we do not know how much the two men are separated in the picture. So the eye instinctively jumps the gap and tells us that the second man, whose image registers a certain size on the eye's retina, must therefore be so many feet distant from the first. The eye regards the nearer man as ten feet away, and, as the farther man appears half the size, he must be approximately twenty feet farther back. (Actually, they are but ten feet apart.)

Now if we consider example G and regard it from the same distance as the other, the image of the nearer man will appear to our eye about the same size as the distant man in example H. But since in the smaller picture the distant man registers about half-size on the eye's retina, we therefore assume he must be about forty feet to the rear of the first man. The distance between the two men thus appears to have increased, although both photographs are geometrically correct. The distances given are, of course, for the purpose of explanation and are quite arbitrary.

The explanation given here is a variant of the psychological idea of "constant size." When the eye receives images of different size, it does not regard the objects as being of normal or smaller size. It assumes that they are of similar size and that one is farther away than the other—the measure of

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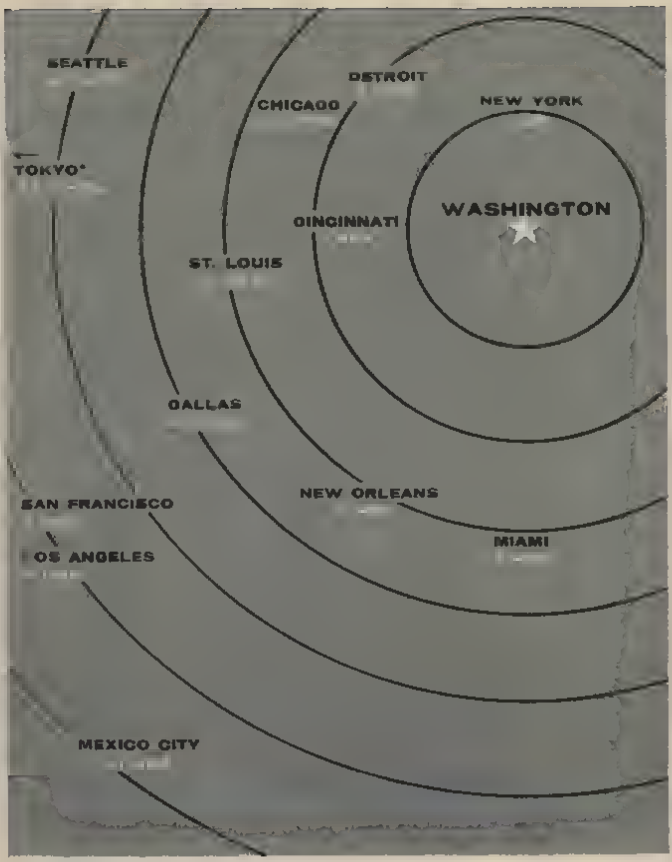

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the distance being governed by experience.

Psychologically, in order to see a picture in correct perspective it is therefore necessary that the images reaching the retina of the eye be of the same size—the same as they would have appeared if the eye had observed them from a position alongside the camera that photographed them. This can also be done where the picture is viewed at a distance equal to the focal length of the camera lens. Where the picture is enlarged, as on the motion picture screen, the viewing distance becomes the focal length multiplied by the magnification factor of the enlargement.

While this rule is broadly correct, it is not the whole story, as will be found from personal observation. The eye and the camera lens do not work in exactly the same way. With the eye, the size of the image on the retina changes as the focus of the eye changes. With the camera, while the lens remains stationary, with an all-embracing vision, the eye sees clearly only one point at a time. In looking from one point to another within a scene or vista, the eye must swivel and the extent of the eye's movement must have some effect on the judgment of distance. A rather extreme example is illustrated in Fig. 2. Here A-B is twice the distance of C-D. But the eye does not turn in the arithmetical ratio of 2-to-1, for the angle A-E-B is more than half that of C-E-D.

Apparent perspective has special applications in cinematography where we are dealing not with still objects at set distances so much as with moving objects. We have seen how a long focal length lens compresses the appearance of distance. Therefore an object moving forward across that distance will appear to travel more slowly than normal. A familiar example of this are newsreel shots of race horses coming down the home stretch where the horses, even though running at top speed, appear to make slow progress toward the wire.

Conversely, where it is desired to exaggerate the speed of an object moving forward from the rear of a scene, such as an approaching train, the effect can be gained by using a short focus lens on the camera. The effect is sometimes enhanced further by undercranking the camera.

As stated earlier, the matter of perspective in a scene or picture is—in addition to being a geometrical question—also a psychological one. END

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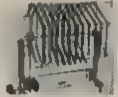

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NEW ARRI BLIMP

(Continued from Page 31)

observation ports in rear of blimp (9 and 13, Fig 4) which enable him to see the footage counter and tachometer, both of which are illuminated by a tiny lamp within the blimp when latter is connected to the power source. A mechanism that resembles a telephone dial in appearance permits camera operator to turn camera motor, shutter and film transport manually when threading film in the camera and for focusing when camera is not running.

The camera motor switch is so arranged that it energizes the magazine torque motor in advance of the camera motor, and also after camera is stopped in order to take up any film slack between the film transport mechanism and the magazine. A pilot light mounted on one side of camera indicates, when pulsating, that camera is running and operating satisfactorily.

The Arri 1000-foot blimp is probably the only one which provides unlimited access to camera; in addition to the front port, which swings open on its hinge (See Fig. 1), three additional doors are provided: the main side door permits mounting camera within the blimp along with the sync motor, and facilitates threading film. The large door on top (which is shown open in Fig. 1) affords access to the film magazine, permits its insertion or removal. Pneumatic hinges prevent this door from slamming shut accidentally. The third or rear door affords access to interior for connecting torque motor drive belt to magazine.

In designing the blimp, Arri engineers employed the newest developments in acoustical engineering. The housing is die cast of magnesium alloy. This is lined with ten alternating layers of sound absorbing materials consisting of goat skin, foam plastic and sheet lead. Over this is a finishing cover of grey corduroy fabric. Sponge rubber is employed throughout for damping sound or providing insulation. Heavy rubber gaskets surround the edges of all doors and doorways. Neither the camera nor any of its accessory parts within the blimp contact the blimp walls, but are floated on sponge rubber buffers. Result is almost 100% suppression of camera noise.

Use of the blimp with the Arriflex 35 makes a buckle switch desirable. Where the camera is purchased complete with 1000 foot blimp, this feature is installed in the camera. It can also be added later by the New York service department of the distributor. The switch is located over the lower loop, as shown in Fig. 2, so that in event of a film jam or whenever end of a roll of film passes the switch, the camera motor is automatically stopped. At the same time the external pilot light stops pulsating, indicating that the camera has stopped running.

Net weight of the blimp with the Arriflex 35 and sync motor, but without magazine, is 115 lbs. Overall dimensions are: length, 31 inches; height, 21 inches; width, 15 inches. Price of blimp complete with all accessories is $3,995.

SNOWTIME MOVIE MAKING

(Continued from Page 40)

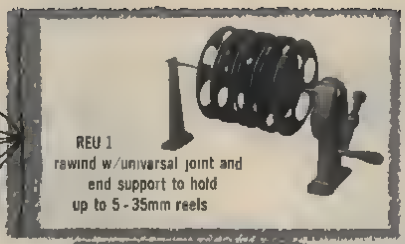
ones—remember that when you take a camera from a warm room or a heated automobile into the cold outside air, any moisture on camera or lens will freeze and cause the moving parts of the mechanism either to become sluggish, or perhaps not to operate at all. If the moisture is on the lens it will form ice and ruin exposures.

So it is always well to warm your camera before going out into extreme cold weather, thus baking out the moisture. This can be done with the aid of a heat lamp. When you return from the

(Continued on Page 48)

HF

REWINDS *and* ACCESSORIES



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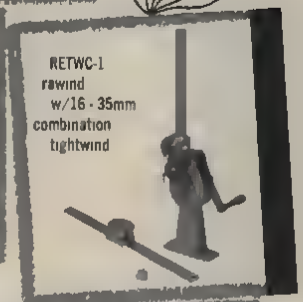

RETWC-1
rewind w/16 - 35mm combination tightwind

RE-1
rewind w/1 reel 35mm shaft

SB 1
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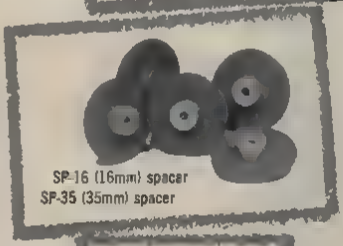

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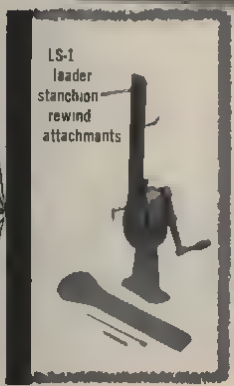

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SNOWTIME MOVIE MAKING

(Continued from Page 46)

outside air to warmer room temperatures, camera and lens may "sweat" as the moisture in the warmer air condenses on the cold metal and glass parts. This may continue until the camera is the same temperature as the room. Before shooting any interior scenes, under such conditions, all camera equipment, including the lens, should be carefully dried.

On a camping trip, it is a good idea to keep camera and film outside all the time, in a safe container. Some Arctic cameramen keep their cameras outside at all times, except when they have to make interior scenes or overhaul the cameras. Special canvas bags are used so they slip completely over the camera and tie around the tripod-legs to keep out the snow.

Another thing—when working in extremely cold temperatures, wear silk gloves. They may not be so warm, but they'll give you almost the same freedom you'd have working with bare hands, and save you the painful experience of having your fingers stick to the cold metal of the camera.

PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 18)

• FRANK PHILLIPS, "Navy Log."* (Gallu Prods.). Sam Gallu, director.

• PHILIP TANNURA, ASC, "The People's Choice."* (Nordea Prods.) with Jackie Cooper and Pat Breslin. Jack Cooper, director.

• WALTER STRENGE, ASC, Duz commercial* (Filmways Hollywood, Inc.) Herb Greene, director.

GOLDWYN STUDIOS

• NORBERT BRODINE, ASC, "The Loretta Young Show."* (Lewislor Prods.) with Loretta Young. Richard Morris, director.

INDEPENDENT

• ELLIS CARTER, ASC, "Grey Ghost."* (Lindsley Parsons Prods.) with Tod Andrews. Harold Schuster, director.

• DANIEL FAPP, ASC, "Kings Go Forth" (Frank Ross-Eton Prods. for UA release) with Frank Sinatra, Tony Curtis and Natalie Woods. Delmer Daves, director.

• CHARLES LANG, ASC, "Separate Tables" (Hecht Hill Lancaster for UA release) with Rita Hayworth, Deborah Kerr and David Niven. Delbert Mann, director.

• JACK MACKENZIE, ASC, "The Flame Barrier" (Gramercy Prods. for UA release) with Kathleen Crowley and Robert Brown. Paul Landres, director.

• GAYNE RESCHER, ASC, "Cinemiracle Adventure" (Louis de Rochemont Cinemiracle Prods.) L. de Rochemont III, director.

• KARL STRUSS, ASC, "Machete" (J. Howard Odell Prods. for UA release, shooting in Puerto Rico) with Mari Blanchard and Albert Dekker. Kurt Neumann, producer-director.

• BOB WEILER, "Russell Hayden Presents"* (Russell Hayden Prods.) Oliver Drake, director.

KLING FILM PRODS., CHICAGO

• DAVID SAVITT, ASC, "Swing 'N Sell" (Eastman color, Norge Sales Corp.) Bill Stewart, director. "Across the Board" (Eastman color, Westinghouse Corp., photographed in New Jersey and Penna.) H. Richard Hertel, director.

KTTV STUDIOS

• STUART THOMPSON, ASC, "Lassie"* (Robt. Maxwell Prods.) with Jon Provost and Cloris Leachman. Phil Ford, director.

LINKLETTER PLAYHOUSE

• ALAN STENSVOLD, ASC, "People Are Funny"* with Art Linkletter. Irv Atkins, director.

McGOWAN STUDIOS

• BAYDON BAKER, "Sky King"* with Kirby Grant and Gloria Winters. Various directors.

• HAL MCALPIN, "Death Valley Days."* S. E. McGowan, director.

METRO-GOLDWYN-MAYER

• GEORGE PEDNAL, "Tom Thumb" (Galaxy Picts. Prod.; shooting in England) with Russ Tamblyn and Terry Thomas. George Pal, director.

• LESTER SHORR, ASC, "Union Pacific,"* (Cahn National Prods.) with Jeff Morrow, Sobey Martin, director.

• WILLIAM SPENCER, Jr., "The Thin Man"* with Peter Lawford and Phyllis Kirk. Oscar Rudolph, director.

• ROBERT SURTEES, ASC, "The Law and Jake Wade" with Robert Taylor and Richard Widmark. John Sturges, director.

• HAROLD WELLMAN, ASC, "Northwest Passage"* Jacques Tourneur, director.

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• CHARLES BURKE, "This Is Alice."* (Desilu Prods.) with Patty Ann Gerrity. Sidney Salkow, director.

• HENRY CRONJAGER, "Sheriff of Cochise"* (Desilu Prod.) with John Bromfield, Harve Foster & P. Gilfoyle, director, "Whirlybirds"* (Desilu Prod.) Harve Foster and R. G. Springsteen, director.

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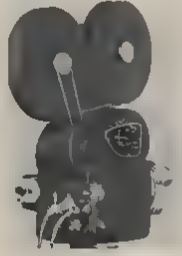

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(Continued from Page 50)

● GUY ROE, ASC, "Dick Powell's Zane Grey Theatre"* (Four Star Prods.) with Dick Powell James Sheldon, director; "Trackdown"* (Four Star Prods.) Don McDougall, director

● WILLIAM SKALL, ASC, "Richard Diamond Private Detective" (Four Star Prods.) Lee Jason, director.

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● EDWARD FITZGERALD, ASC, "The Gale Storm Show."* with Gale Storm. Wm. Seiter, director

● PAUL IVANO, "Telephone Time,"* with John Nesbitt Various directors.

Note:

The television productions in the listings in this column are indicated by asterisks

20TH CENTURY FOX

● CHARLES CLARKE, ASC, "The Barbarian and the Geisha" (Cinemascope & DeLuxe color, shooting in Japan) with John Wayne. John Huston, director.

● JOSEPH MACDONALD, ASC, "Ten North Frederick" (CinemaScope) with Gary Cooper and Suzy Parker Philip Dunne, director.

● JOHN NICKOLAUS, JR., "Gang War" (Regal Films) with Kent Taylor and Gloria Henry. Gene Fowler, Jr. director "Desert Hell" (Regal Films Prod.), with Brian Keith and Richard Denning. Chas. W Denning, director

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● ARTHUR ARLING, ASC, "Kellogg commercial* Jack Daniels, director. Mercury and Marlboro commercials* Wil Cowan, director

● WILLIAM DANIELS, ASC, "And Ride A Tiger" (CinemaScope) with Jane Allyson and Jeff Chandler. Helmut Kautner, director.

● JAMES DROUGHT, Ford commercial* Joe Swovely, director. Kellogg commercial* James Sherwood, director

● IRVING GLASSBERG, ASC, "Twilight for the Gods" (Color, shooting in Hawaii), with Rock Hudson and Cyd Charisse. Joseph Pevney director Mercury commercial* Jack Daniels director

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PHOTOGRAPHIC ASSIGNMENTS

(Continued from Page 53)

● HAROLD LIPSTEIN, ASC, "Never Steal Anything Small" (CinemaScope & Color) with James Cagney and Shirley Jones. Charles Lederer, director

● RUSSELL METTY, ASC, "There's a Time to Love," (CinemaScope & Color; shooting in Germany) with John Gavin and Lisa Pulver. Douglas Sirk, director.

● WALTER STRENGE, ASC, Coca-Cola commercial* Wil Cowan, director

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● WESLEY ANDERSON, Gallo Wine commercial* Pete Monahan, director

● CARL BERGER, ASC, "Cheyenne"* with Clint Walker Allen Crosland director "Sugarfoot"* with Will Hutchins, Pete Adreon, director.

● JOSEPH BIROC, ASC, "Born Reckless" with Mamie Van Doren and Jeff Richards Howard W Koch, director

● JOSEPH BRUN, ASC, "Across the Everglades" (Shulberg Prods., Eastman color, shooting in Florida) with Christopher Plummer and Gypsy Rose Lee. Nicholas Ray, director.

● ARTHUR FEINDEL, ASC, Ford and Kellogg commercials* Pete Monahan, director, Kaiser Aluminum commercial* Various directors. Ford Thunderbird commercial* Robert Larsen, director.

● PERRY FINNERMAN, "Colt 45"* with Wade Preston, Various directors.

● H F. KOENEKAMP, ASC, Kellogg commercial* Pete Monahan, director.

● J PEVERELL MARLEY, ASC, Flagstaff beer commercial* Virgil Vogal, director

● NICK MUSURACA, ASC, "Too Much, Too Soon" with Dorothy Malone and Errol Flynn Art Napaleon, director.

● FRANK PHILLIPS, Ford commercial* Pete Monahan, director.

● JOSEPH LA SHELLE, ASC, "The Naked and the Dead" (CinemaScope & WarnerColor; RKO Pictures) with Aldo Ray, Cliff Robertson and Raymond Massey. Raoul Walsh, director.

● HAROLD STINE, ASC, "Sugarfoot"* with Will Hutchins, Pete Adreon, director; "Maverick"* with James Garner. Allen Crosland, director

● RALPH WOOLSEY, ASC, "Maverick"* with James Garner Various directors.

● FREDERICK A. YOUNG, "Indiscreet" (Grandon Prod., shooting in England) with Cary Grant and Ingrid Bergman. Stanley Donen, producer director

HOLLYWOOD'S GLOBETROTTING CAMERAMAN

(Continued from Page 35)

was started At this writing Clarke has yet to see the rushes of the fire scenes, but its a good bet exposure will be "right on the nose" When I asked Clarke how he determined what exposure to use for these shots, he explained simply that it is something that a cameraman knows intuitively from long experience. that deprived in this instance of the advantage of an exposure meter, he had to rely on his memory of similar situations encountered on the past and how he met them.

Much of the success of foreign location filming, Clarke said, depends upon your crew. "The men must work well together They must like to travel, have no domestic troubles to worry them while they are away from home, and be able and willing to put up with some hardships." Clarke has nothing but high praise for Scotty McEwen and Till Gabbani, his assistant and operator respectively, both of whom have worked with him for years. "With a devoted and dependable crew such as this, I am able to give my full attention to interpreting what the director wants to put on film," he said.

Twentieth Century-Fox is said to be the first American film company to photograph a period picture in Japan. Hence, it encountered problems which others that preceded it had been fortunate to escape. Because "The Townsend Harris Story" takes place in 1856, no modern day electric wires, telephone poles, etc could show in any of the scenes Existing corrugated metal buildings had to be covered and thatched to resemble the huts of a hundred years ago. And Clrake and his camera crew had to be especially alert that nothing modern was visible in the scenes while the cameras were rolling.

"The Townsend Harris Story" is Clarke's second recent assignment in Japan The first. "Stopover Tokyo," was completed just a few months before he undertook this assignment. Between the two, Clarke did location photography for his studio in Greenland, Scandinavia, Europe and Africa for Fox's forthcoming release, "DeLuxe Tour."

During the many years he has been a director of photography, Charles Clarke has filmed foreign location shots for many memorable pictures. His first assignment to the Orient was for scenes for "The Good Earth." Some of the most pictorial tropical shots in "Mutiny on the Bounty" he filmed in Tahiti. More recently, he shot footage in Italy for for "Three Coins in the Fountain": in Spain for "The Sun Also Rises"; in India for "The Rains of Ranchipur"; and in Hong Kong for "Love is a Many Splendored Thing."

Clarke's career as a Hollywood studio cinematographer began in 1920 at the old National Film Studio, where he worked on one of the original "Tarzan" films starring Elmo Lincoln He then went to Famous Players-Lasky studio which later became Paramount, then to William Fox, and subsequently to M-G-M for the "Good Earth" assignment. Several years later he rejoined the Fox studio, which now had become Twentieth Century-Fox.

"Years ago," Clarke said while reminiscing, "M-G-M decided I was an 'exterior' man—a specialist in exterior photography, and the reputation has clung to me over the years. I used to resent it, but now I have come to realize that this had its advantages. As a result, I have had the pleasurable experience of having been sent to just about every country in the world, either to direct the photography of a picture or to film special location footage or background plates."

Of the cinematographer's philosophy Clarke said: "Every new picture assignment is a thrill in itself. The essence of a good motion picture assignment is the doing of something that has not been done before. We are, therefore, always looking for a fresh approach."

What will Clarke's next assignment be? Who can really say—with space travel imminent.

"WILD IS THE WIND"

(Continued from Page 25)

answer was to alter the camera angle slightly to reduce the amount of background showing in the scene, and to bring in booster lights to bolster the waning daylight "Here we had to be extremely careful," said Lang, "not to go overboard with fill light from the boosters so it would become evident on the screen. The Brutes, which we used for boosters, were toned down with spun glass diffusers and placed as far back as practicable; the aim always was to keep a proper relationship between light on the actor's face and that on the ground and surrounding objects." When Lang started shooting on this sequence, he figured the company could wind it up in about an hour and a half. As it turned out, it took over three and a half hours.

When asked how much difference there was in his exposures from the time

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he made the first shot until he completed the last, Lang said he started shooting the first graveside scene at a stop of f/16. As the light diminished, it became necessary to gradually open up the lens for each subsequent take, and the final shot was made with the lens opened to f/4.

Lang emphasizes the importance of keeping the light on players' faces properly balanced with the background at all times. This balance must be maintained consistently from scene to scene, he pointed out, so that sequences of shots appear on the screen as if shot all at the same time—not part one day, and another part the next.

The thing that is impressive about the exterior photography of "Wild is the Wind" is the way Lang made use of the prevailing light, no matter what the weather condition. In a way, the photographic effect is better pictorially than if the scenes had been shot on a bright, sunny day. This is undoubtedly due to the fact that when he encountered an adverse light condition, Lang was compelled to reach down into his bag of tricks for an answer and in so doing invariably achieved a better pictorial effect.

Lang emphasized that booster light was always used in moderation. "If you try to make a 'sun' out of the booster light," he said, "it just doesn't work—especially when shooting long shots or scenes with wide area. On the other hand, when there were medium or close-up shots to be made, say against a barn or some other nearby background, booster lite was used successfully in all kinds of natural light conditions. The trick here was to subdue, with silks, the booster light illumination to make it compatible with the existing light—say, for example, to make the lighting appear the same as that of a dull day when the rest of the scenes were actually shot in overcast."

Lang pointed out the reason he prefers to use Brutes for booster light is that he can work with the lamps placed farther back on the set, thereby providing not only more freedom for cast and crew but a quality of illumination in which the actors can move about the set freely without worrying about fill light intensity increasing greatly as they approach the camera; the range of intensity lengthens out toward the far end of the booster lite beam, whereas it increases sharply the closer you are to the light source.

Some of Lang's most impressive photography from point of lighting and composition, was executed within the sheep barns on the Nevada location, where an important sequence involving Miss Magnani and Anthony Franciosa was enacted. It is the subtle lighting

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that Lang employed here that one remembers most especially the way lighting is pin-pointed on the face of Magnani or Francioza to center attention on them during highly dramatic moments At the same time, daylight filtering through to the barn interior was accented or boosted to more desirable intensity for better overall pictorial effect in the scenes.

Of course, there is a great deal more to "Wild is the Wind" than the few scenes and locations mentioned above; but it was on the ranch location, not on the sound stage, where the most challenging photographic problems of the production were met Back in Hollywood, where the company resumed working to complete additional interiors, the chief problem was matching set illumination and lighting patterns to match the location takes a comparatively simple matter for any experienced cinematographer

It was on the location, however, where mood and lighting patterns for the picture were established—where it was decided that utmost realism should key note the whole photographic approach. Pictorially, it gives the production greater authenticity and greatly increases interest in the story

Some of the important things the student of cinematography should remember about Lang's photography of this picture are. his credo about keeping booster light down to the absolute minimum, keeping the general lighting as realistic as possible and not go overboard on fill light and arty effects, maintaining an effective pictorial balance by keeping the light on background walls down to the minimum; and sustaining mood through realistic lighting keyed especially to the story and action.

THE SCIENCE OF PROCESS PHOTOGRAPHY

(Continued from Page 37)

er in the center than at the edges. Process technicians have worked out a number of methods for coping with this problem, one of which is projecting the BG plate at a slight angle with the screen tilted back, as diagrammed. Today, transparency technique has progressed in the major studios to the point where the "hot spot" is no longer a problem

Silent operation of the BG projector is important, too, in sound process work, and blimps are invariably used on both the projector and camera to deaden all mechanical sounds One of the reasons the new Mitchell background projectors are gaining favor with the major studios is because they have scientifically-silenced movements and therefore can be used without cumbersome blimps.

Film registration is probably a more critical factor in process photography than in any other phase of motion picture production, because there must never be even the slightest "unsynchronized" movement between foreground objects (players, etc.) and the background scene A slight amount of image movement sometimes is not objectionable if there is no other element in the overall scene with which to compare it. But where the background shows a slight wavering movement and the foreground is rock-steady, the error is readily apparent For this reason the best background projectors are equipped with registration pins in the film movement and most background plates are shot only with cameras having pins. Standard background projectors also have interchangeable movements so that plates that were photographed with cameras having pins either above or below the frame can be registered at the same sprocket holes in projection.

Black-and-white background plates are usually photographed on a slow, fine-grain panchromatic stock. The negative and prints are then developed with the contrast characteristics of the studio's own process equipment in mind. Some process specialists require three prints to be made, each at a different printer light, thus providing a selection of plates from which the most suitable is chosen for projection after routine tests One print is made at a brightness level predetermined as normal, while the additional two are made to bracket this choice In this way, any last-minute adjustment can be made on the process stage to balance background density with the foreground lighting, simply by changing prints in the projector.

Most labs print black-and-white process negatives on regular fine-grain release stock having standard Bell & Howell (negative) perforations A step-printer is used to obtain the maximum benefits of pilot-pin registration of the negative in the prints

Lighting a set that includes a process screen requires more care than is usually required for the average set on the sound stage Too much light must not be allowed to spill over onto the screen, thereby lightening and degrading the projected image Any light that hits the screen directly washes out part of the background image altogether. The actors, set, and props in the foreground must be arranged and lit to match exactly the lighting and contrast *and direction of light source* in the background plate This might seem a case of the tail wagging the dog but the screen director and the cameraman usually are given a choice of BG plates to select from in order to make this "matching up" procedure as easy as possible

Where there is greenery (foliage, grass, trees, etc.) in both the plate and foreground set, the cameraman has an additional problem of balancing screen and foreground lighting so that there will be no difference in the shades of the two foliages to reveal that process was used in making the shot Here knowledge of color contrasts and especially the use of a color contrast chart are invaluable for the cameraman

An oddity about process photography is the fact that the BG screen may photograph brighter than it appears to the eye, and may register with greater brightness than an exposure meter indicates. This is due to the fact the projected image of the BG plate is flickering 24 times a second because of the shutter blade in the projector. As a result, there is light on the screen only 50% of the time; yet this light—because the flashes are synchronized with the cameras—is almost 100% utilized in exposing the negative. The set lighting, on the other hand, supplies constant illumination but is acting on the negative only when the camera shutter is open Therefore, the light on the screen that we see is twice as effective photographically as the illuminated foreground.[1]

The screen illumination also is more effective because it is produced by a blue white carbon (for B&W photography) while the set is usually lit with incandescent lamps or a combination of arcs and inkies. Veteran process men are seldom bothered by these factors, however, because they intuitively see a process screen in terms of its brightness in the final print

Although standards for process photography vary with each studio, the procedures outlined above are pretty general Process is also now being utilized by many producers of industrial, training and television films Catering to such producers are a number of independent process specialists, such as Bob Hansard of Hollywood, whose three portable outfits are in constant demand All the major studios, of course, maintain transparency departments staffed with veteran specialists, and are equipped with the very latest tools available for this work **END**

([1] "Background Projection Photography," by Charles L. Anderson, American Cinematographer, August, 1952.)

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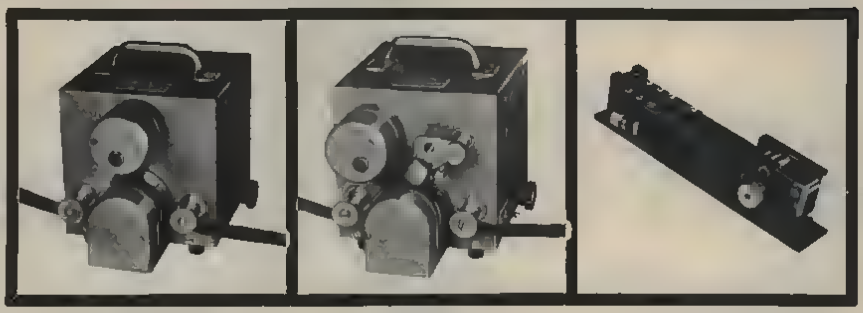

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SHOOTING "ALL-STAR GOLF"

(Continued from Page 27)

and then cutting directly to the green play. Film editor John Gable does a wonderful job of compressing the game, and its three sync sound interviews, without the impression of the play being hurried or anything being left out. One of the biggest editing problems is deciding which holes to cover in animation. Since all of the game is filmed, this is a cutting room decision which is made after a careful study of all footage.

The elevated camera will, whenever sighting permits, shoot a zoom shot of the distant tee-off with the lens in telephoto position and then widen the zoom and tilt down to the green as the ball comes into view. As the green play progresses the zoom angle is tightened to encompass players' putting action. Ground-level zooming is utilized to narrow the angle from medium shot to closeup as the putt is made and the ball rolls toward the hole. The imaginative use of the zoom lens—to bring the viewer intimately into the play, to widen and show more of the action and to dramatically transport the viewer from one point to another—are all used with discretion, variety and good taste. "All-Star Golf" sets a very fine example of the proper use of zooming techniques for filming this popular sport.

The two station wagons equipped with CarPac roof platform, the hydraulic lift truck, the sound truck and the numerous little Golfmobiles are used to transport the production crew, fifty-odd cameramen, sound men, assistants, electrical technicians, as well as golf personnel, the director, film editor and odd helpers about the course. The vehicles, along with cameras, accessories, cables, golf bags and other technical paraphernalia, plus the ever present gallery, make a picturesque parade as they travel along over the golf course.

Moves are carefully coordinated so that the game is held up as little as possible. Since the game cannot resume until all cameras are ready it is imperative that both sound and camera movements be precisely timed. Everything is done to photograph the game with as little delay as possible so not to throw the players off stride. Usually the hydraulic-lift truck moves up to the green and sets up while the other five cameras line up for the tee-off. Sound is

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ready at all times regardless of whether recording on the tee, approach or green. Since all cameras roll together, all magazines are changed at the same time.

A total of $78,000 in prize money is awarded the participating golfers. The winner receives $2,000, the loser $1,000, plus $500 bonus for an eagle and $10,000 for a hole in one. The matches are scheduled so that they do not conflict with regular tournaments. All golfing arrangements are made with the full cooperation of the Professional Golfers Association by Mr. Ray O'Brien, formerly with the PGA. Such top pros as Gary Middlecoff, Jimmy Demaret, Dutch Harrison, Billy Maxwell, Gene Sarazen, Tommy Bolt, Sam Snead, Ed Oliver and numerous others take part in the matches. The series is given a $64,000 Question flavor because the winner advances each week to defend himself against the challenging player. Winning two or three weeks in a row adds a suspenseful continuity to the show.

While many of the players have an initial reluctance to engage in a match with a half-dozen movie cameras grinding on the sidelines, they are impressed with the fact that millions of people will see them on television and that what they are doing not only pays well but is good for the game. Like the bowling series, which is credited with bringing many newcomers, particularly women, to the sport, "All Star Golf" is certain to interest many televiewers in golf because the professionals make the game look so easy.

The production of this $750,000 twenty-six episode one-hour golf series, now being sponsored nationally by Miller High Life Beer and Wildroot Hair Tonic on 142 TV stations, stems from the success of Peter DeMet's Championship Bowling, now in its fourth year on network television. (See American Cinematographer for March, 1957.) DeMet, a Chicago auto dealer, started in television as sponsor of a live bowling show which proved so successful that it was filmed and sold to 175 markets and has won the Billboard Award three times.

ENO

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The Film Director of WAGA TV, Atlanta, Georgia, tells what and how to shoot for the growing market for the film product of the non professional cinematographer

BOOKS you'll want to read . .

The Technique of Film and Television Makeup, *by Vincent J-R. Kehoe, S.M.A. Hastings House Publishers, Inc., 41 East 50th St., New York 22.* $9.00

The first book to treat fully all the latest make-up methods and procedures both for color and black-and-white processes is a practical guide for the novice and for all concerned with the art. For the professional, there is now available in this one compact source much hitherto difficult-to-find data for reference or comparison.

Here within 265 pages augmented with profuse photo illustrations and diagrams, are all the basic techniques of straight and character make-up. There is detailed information on the problems of make-up for age, and for the racial and national types. Make-up methods for the stage and for still photography are presented, too, while extensive sections cover make-up of period and historical characters, popular and special character types.

Especially valuable for reference is the detailed treatment of techniques and formulas for impression and duplicating materials—latex, plastics, casting molds, adhesives, sealers, waxes, cleaners, skin textures, hair work, and much more.

Television Production, *by Harry Wayne McMahan. Hastings House Publishers, Inc., New York, N. Y.* $7.50

For everyone concerned with the television industry, this 232-page encyclopedic handbook of fundamentals—with dictionary features built in—is a unique and authoritative "working tool." Here are interpreted the words as well as the working procedures of 16 basic operations in TV.

While planned to be read as a running text, those in search of random definition may find it readily through the easy-to-use Index, together with other related words that amplify its meaning. In fact, this book might well be called a "Step-by Step Dictionary" of the more than 2,000 terms that television has created (or borrowed from the movies) in its first ten years.

The book's style, too, is in keeping with its purpose. It avoids the ponderous and the highly technical; sometimes it oversimplifies; sometimes a frivolous note or slang is mixed with the scientific term—with no apologies. For this is the living language of television.

Research Film in Biology, Anthropology, Psychology and Medicine, *by Anthony R. Michaelis. Academic Press, Inc., 125 East 23 St., New York 10, N.Y.* $10.00

Research Films, which embraces 490 pages, well illustrated, is concerned with the techniques and applications of cinematography in the experimental sciences. It is the first comprehensive survey of the field to be written in English in the last forty years. Designed for producers and users of research films, the work describes the methods successfully employed in the past and opens new vistas for the utilization of film as a research tool.

The author, Anthony R. Michaelis, is former president of the Australian Scientific Film Association. At the end of World War II he was able to devote himself to his life-long interest in cinematography and to combine it with his research work. Since then he has made research films on numerous subjects, including the circulation of blood in frogs, the spinning of aeronautical models in wind-tunnels, and the behavior of bubbles in liquids.

His book is augmented by an extensive Author and Reference Index in addition to a comprehensive subject index.

How To Take Better Home Movies, *by Peter Gowland. Arco Publishing Company, 480 Lexington Ave., New York, N. Y.* $2.00

The name Peter Gowland is familiar to almost every amateur photo and movie fan and especially to readers of magazines devoted to still photography. Drawing on his long experience and association in the motion picture industry, and 15 years as a serious hobbyist, the author through his book gives valuable instruction in all the basic fundamentals necessary to making 8mm and 16mm movies having a professional finish. As an added fillup, Gowland has secured and included in his book personal statements on procedures of professional cinematography from such Hollywood cameramen as James Wong Howe, A.S.C., Lee Garmes, A.S.C., and Leon Shamroy, A.S.C.—144 pages, well-illustrated, and well-worth the price to the amateur interested in bettering his movie making.

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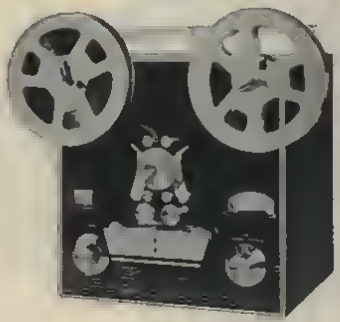

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WOLLENSAK FADING DEVICE

(Continued from Page 38)

tion has been lacking in other mechanical devices designed for making fades, thereby resulting in haphazard lap-dissolves, no such fault exists with this device. The spiral spring drive insures constant torque over most of the free polarizer's rotary movement.

When the polarization plane of the polarizers is crossed, light extinction is effected about 98%. The amount of the remaining light is then blocked out by two unique capping shutter blades which close automatically at the end of a fade or open when a fadein is begun. These blades serve still another purpose, too At the close of a fadeout, the film can he wound back in the camera for a lap dissolve without the bother of capping the lens.

To produce professional-like lap-dissolves, which requires that the overlapping fadeout and fadein each involve an equal number of frames of film, a 16mm camera having a frame counter and means for winding back the film is essential Otherwise, it is difficult if not impossible to wind back the film to the exact starting point of the fadeout when starting the fadein

Opening and closing the fading device can he effected at any time and as often as necessary without exposing film In this way it is possible to make a succession of fadeouts or fadeins without having to subsequently make a fadein or fadeout. The device is set in motion independent of the camera merely by pressing the cable release previously mentioned. When the device is "open" for the purpose of exposing pictures in the normal way, a small red indicator automatically protrudes from the top of fader. It retracts as soon as the device is to set in motion to effect a fadeout

Because normal photography takes place with the fader attached to the camera lens, the amount of light reaching the film is consequently reduced due to the density of the polarizing filters It is therefore necessary to increase the normal exposure by two stops to compensate for loss induced by the polarizers—which in this case act somewhat like a neutral density filter.

Tests performed with the Wollensak Fader attached to a popular 16mm camera having windback and frame counter resulted in fades and lap dissolves of full professional quality. The device itself is of the usual Wollensak quality in workmanship and styling — rated among the best. In this writer's opinion, it is the first really practical fading device ever offered 16mm film makers.

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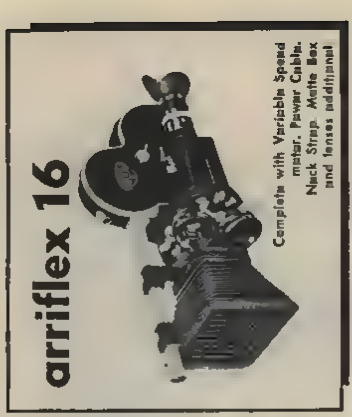

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any 16mm camera for making fades, its use for lap-dissolves is limited to those cameras affording a precise film wind-back and a frame counter, as already pointed out. The device was especially designed for use with the following lenses: 1" f/1.5 and f/1.4 Cine Raptars; 1" f/1.9 Cine Raptar with adapter; and the 1" f/1.9, f/1.5 and f/1.4 Switars with adapter. It can also be adapted for use with many other lenses on special order. The list price is about $69.50

TECHNICAL QUESTIONS AND ANSWERS

(Continued from Page 8)

to eliminate the troublesome fault.—*Ub Iwerks, A.S.C., Walt Disney Studio.*

Q Please advise what effective methods can be used to obtain a steady, level image when photographing subject matter from a small boat at 24 frames per second.—*J. J. S., Philadelphia, Penna.*

Answer: Using modern techniques of electronic and mechanical engineering so that human reaction time is not the limiting parameter, it should be possible to design and construct an inertia guidance servo-mechanism that will accomplish the desired results with precision. The main requirement is an adequate budget for the work.

In cinematography, suppression of camera action is not an aim. Instead, motion is introduced under controlled conditions and used effectively to enhance entertainment value.

It is well to point out at the start that most small boats are unsuitable for cinematography except in calm waters. When we have an assignment of this sort, we aim for two things: 1) to restrict the violence of motion due to natural forces and 2), to control the direction, angle, amplitude and tempo of camera movement. The first requirement can be met by using for the camera boat a craft large enough for the conditions that will be encountered when shooting. Cycles of pitch, roll and yaw must have a long enough period so that a person of normal reflexes can maintain control of the camera. In rough, open sea waterline lengths of 90 feet or more are essential in the craft used. For choppy water, where no large waves are present, a suitable camera craft is often rigged by the company at the location. The following describes a type that we have used many times:

A grid of planking is secured to two or more floats, such as rowboats, sealed oil drums, or rafts of planks which should measure 12 feet or more along the shortest side. The whole unit should be capable of supporting weight of several hundred pounds—in any event, more than the normal working load.

The planking is cross-braced for fair rigidity, and is left open to the action of the water so that wave crests can move through it without rocking the platform. A camera raft of this type having a low ratio of positive buoyancy to mass is quite stable and can be propelled at moderate speeds and maneuvered readily by outboard motors (the full swivel type).

The positive aspect of the job is controlling movement in the scenes. This we have done on countless productions by using a gimbal-type tripod tied down at the points. This tripod consists of a rigid steel shaft coupled through a husky universal-joint to the tripod legs, which supports the camera mounted on a pan-head, and enables it to remain plumb or level regardless of the angle assumed by the tripod base when moving or swaying with the craft on which it is mounted.

The lower section of the shaft is made to telescope and may be adjusted so that the natural frequency of its pendulum action is out of resonance with the craft; thirty to forty inches is a frequent working length.

At the base of the shaft, lead weights are firmly secured—100 to 150 pounds being the usual minimum for satisfactory inertia. Photographing a boat race in the North Atlantic, using Technicolor cameras in waterproof blimps, we had 360 pounds of lead at the base of the shaft on each gimbal tripod when working in heavy seas with winds of gale force.

On exteriors, multiple strands of heavy rubber bands are attached to base of the shaft to further restrict the pendulum action. Weight and tension are adjusted to give the right heft and feel for camera operation. When filming continuity at the studio, the gimbal action is approximately simulated so that interior scenes will intercut without change of tempo.

From here on in, character of the photography depends on the skill, alertness, agility and discrimination of the camera operator.—*Clifford Stine, A.S.C., Universal-International Studio.*

Q When several 16mm cameras of different makes are to be used on a production, what is necessary to insure that the frame lines of each camera will match?—*S. L. E., Boston.*

Shoot a short test strip with each camera, make comparisons, and have aperture plates adjusted where necessary so that all cameras are uniform.—*Walter Strenge, ASC.*

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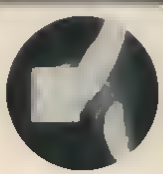

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